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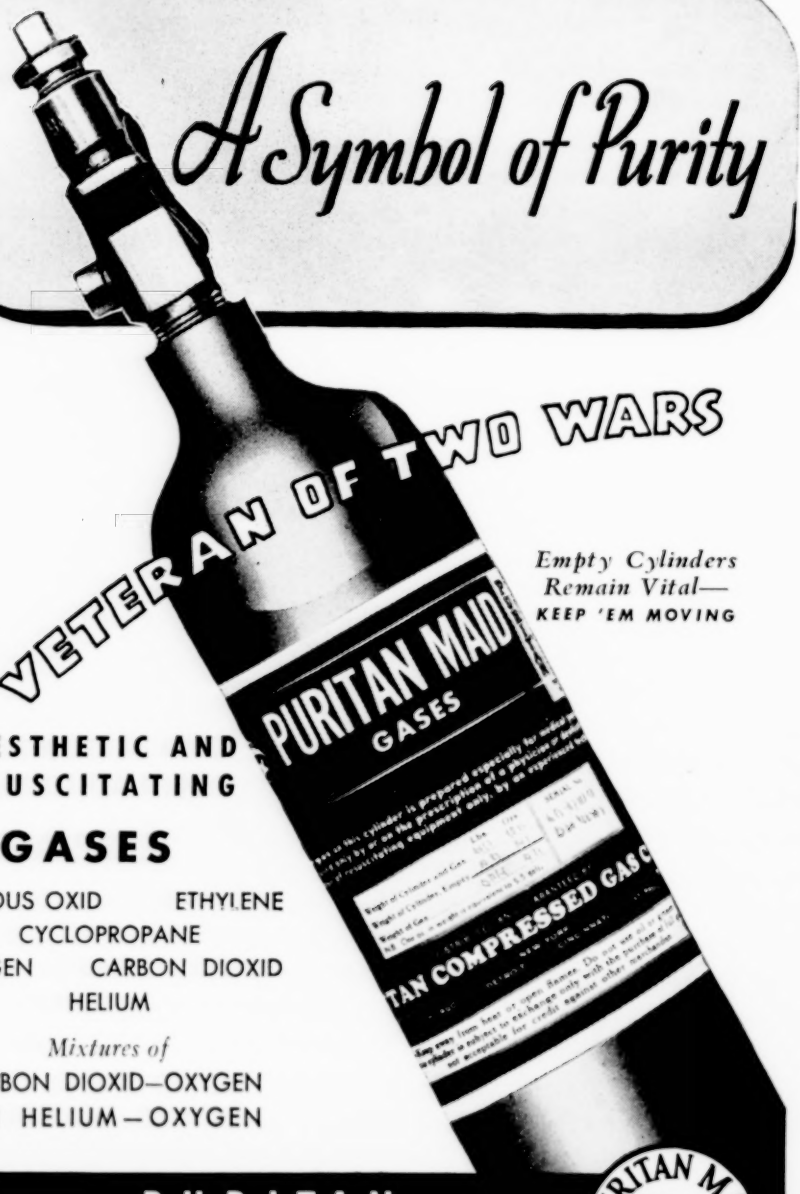

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FEBRUARY CONTENTS

Professional Articles:

Continuous Caudal Anesthesia and Analgesia in Obstetrics, *by Edward P. Mininger* 7

Organization of a School of Anesthesiology, *by Sister Seraphia, O.S.F., R.N.* 12

Facilities in the School of Anesthesiology, *by Mary H. Snively, R.N.* 18

Verbatim Reprint:

Institute's Educational Forum, Dr. Joe Park's Verbatim Remarks . 26

News Items:

Association News 58

Cited for War Service 62

Annual Report of Executive Secretary 63

Notes from the Executive Office 65

Advertisers:

Dewey and Almy Chemical Company 25

Thomas Edison, Inc. 4

Mallinckrodt Chemical Works 24

Merck and Company 3

McKesson Appliance Company 2

Ohio Chemical and Mfg. Company . . . . . Back cover

Puritan Compressed Gas Corporation . . . . . Inside front cover

Linde Air Products Company .. . . . . Inside back cover

E. R. Squibb & Sons 68

Classified Advertising 57

Snow so white, air so crisp and sharp; time for winter sports. Time for long cosy evenings at home . . . time to read your copy of this especially prepared "Institute Issue" of The Journal of the American Association of Nurse Anesthetists!

Continuous Caudal Anesthesia and Analgesia in Obstetrics

EDWARD P. MININGER, M.D.
Assistant Superintendent, Medical Staff, City Hospital, Cleveland, Ohio

History and Development: Sicard and Cathelin in France in 1901 utilized the sacral canal in their effort to administer extradural anesthesia for surgical procedures on the lower extremities. About twenty years later, this procedure was used for obstetrical procedures in Europe. Our first record of caudal anesthesia in the United States is in 1923, but it was not until the nineteen-thirties that caudal anesthesia was used in a sufficient number of obstetrical cases to evaluate its use.

Caudal anesthesia administered as single injections attained a degree of popularity around 1938, but it was not permanent. The method seemed doomed to oblivion until Hingson and Edwards, being cognizant of the work of Lemmon on continuous spinal anesthesia, utilized the principle of re-injection through an apparatus which was left in place during labor and delivery.

Anatomy of Caudal Anesthesia and Analgesia: Two important anatomical structures must be kept in mind in understanding and using this method. The sacrum, being a bone made up by fusion of five vertebrae, with its canal, surrounds the lower portion of the dura and the emerging nerves which make up the distal portion of the cauda equina. The dural sac normally extends into the caudal canal as far as the second sacral segment. Anomalies in the size and shape of the sacrum with its canal and anomalies of the dura must always be kept in mind, for the safe use of this method depends upon the administration of an anesthetic solution into the sacral canal, but not through the dural sac. The tissue within the canal includes fat and a plexus of veins in addition to the dura and nerve tissue.

Technic of Administration: The patient is usually placed in the left lateral position. The very obese patient, in whom palpation of the sacral hiatus is difficult, is asked to assume a modified knee-chest, or kneeling position. In the latter position, the gluteal fold more accurately corresponds with the midline of the bony structures and more accurate placement of the needle is facilitated.

The skin overlying the sacrum and adjoining areas is scrubbed with soap, ether, and some antiseptic solution.

Presented October 4, 1944, Cleveland, Ohio, before the American Association of Nurse Anesthetists.

After attempting to palpate the sacral hiatus, the needle is introduced through the skin toward it. In our earlier experiences, we preceded the placement of the needle by infiltration of the skin with anesthetic solution. The areas of infiltration very frequently became infected, with a resulting painful, slow-healing skin ulcer.

The needle is passed through the sacral hiatus and its membrane, then cephalad in the caudal canal for a distance of approximately 4-5 cm. Three tests are made to assure proper placement of the caudal needle. First, the stylet is removed, syringe attached, and aspiration attempted. If no clear fluid or blood is aspirated, the second test is made. Five cc. of normal saline solution are rapidly injected into the tissues, with the operator's hand being placed over the area nearest to the tip of the needle. In this manner, if the needle has been placed in the subcutaneous tissues rather than through the canal, the occurrence of a bleb can be palpated early and the error recognized. The saline solution is promptly absorbed with no pain. Third, a test dose of 10 cc. of anesthetic solution is administered following the saline solution, if no bleb is produced by the saline solution.

During the ten minutes following injection of the test dose, the patient is asked to move her legs frequently and to describe any subjective changes she experiences. At the end of ten minutes, if no evidence of motor paralysis of the lower extremities is apparent and blood pressure has not fallen significantly, an additional 20 or 30 cc. is administered. The patient is engaged in conversation during the actual process of administering the anesthesia. The position behind the patient is a rather difficult one in which to observe accurately the minute changes which might occur during drug reaction, or inadvertent intravenous injection of the solution. Blood pressure is checked and recorded at frequent intervals.

The patient's response to this procedure includes the following: During the injection of the anesthetic solution, a tingling sensation in the lower extremities is frequently described. In instances where the injection is more rapidly performed, a headache is occasionally mentioned as the last few cc. are being injected. Headache is probably due to the encroachment of the fluid upon the dural sac with resultant increase in intracranial pressure. Within five to twenty minutes, the patient experiences complete disappearance of her pains. The dramatic response of the patient to relief from pain has been more than adequately publicized.

The level of the anesthesia acquired by the administration of 30 cc. of solution is observed to vary from the level of the symphysis pubis to the nipple line. The duration of anesthesia varies also with the different drugs used. Uterine contractions continue with no change in frequency or intensity, as labor is well established at the time the procedure is instituted. Complete relaxation of the rectal sphincter allows free exit of fecal material, completely beyond control of the patient. This relaxation also facilitates rectal examination to determine the stage of labor.

Three factors are to be considered before re-injection of the drug:

First, the level of anesthesia from the original injection is important. If this level is found to be above the umbilicus, a smaller amount of anesthesia is administered for the re-injection.

Second, if the original fall in blood pressure is profound and near shock

level, more caution is exercised in choosing the quantity for re-injection.

Third, if recurring pains are asymmetrical, the patient is placed to rest upon the side in which the pains are occuring before re-injection, so that gravity may favor the uncomfortable side in the subsequent injection.

Caudal Anesthesia Alters Maternal and Fetal Physiology: Changes in the physiology of mother and baby are profound in the administration of continuous caudal anesthesia and analgesia. The circulation in every instance is modified. Vasodilatation of the anesthetized area occurs in every instance that anesthesia is achieved. This is marked by a fall in maternal blood pressure and a change in skin temperature and skin color. The fall in blood pressure is usually transient and of minor magnitude. It is found to be greater in the instances where the kneeling position is used for the administration of the first injection. The patient maintains motor function of the lower extremities in most instances but, according to the duration of the anesthesia, experiences a progressive, although temporary, paralysis. The physiology of posture is sufficiently modified that the patient in a lateral position is observed to have a more extreme lordosis than normal.

The physiology of labor is modified; the first stage of labor only slightly. I am not completely convinced that the first stage of labor is appreciably shortened. This has been claimed by other workers. The second stage of labor is definitely found to be significantly prolonged in the primiparous mother. We chose to use operative delivery repeatedly to effect delivery, so the actual degree to which the second stage of labor might be prolonged is not observed. The third stage of labor is associated with less bleeding of uterine origin, but vasodilitation in the skin and subcutaneous tissues is evident from the diffuse oozing of the traumatized tissues.

Disadvantages of this Method:

1. It is time-consuming. In contrast to use of sedatives, it cannot be directed by telephone, or other remote control.
2. The skin and subcutaneous tissues at the site of injection are always traumatized, easily contaminated during the administration of medication and always infected within forty-eight hours after delivery.
3. Defecation and urination are not possible during use of this method.
4. Relaxation of the lumbar muscles during the state of anesthesia in some instances allows the muscles and ligaments of the low back area to be flexed beyond their natural range of motion with a resulting prolonged postpartum backache.
5. Not rarely, drug reactions occur, manifested by slight tremors of the extremities and occasional loss of consciousness. Intrathecal anesthesia is always possible. A true sensitivity to the anesthetic drugs was observed in no instances.
6. This method cannot be used in a large group of cases including obese patients, those with anomalous sacra, or having very rapid or prolonged labor. In cases where labor is prolonged, the effectiveness of recurrent injections is less on each occasion. This method is also impractical for hysterical and severely apprehensive patients and those having skin infections about the back and sacrum.
7. This method is capable of producing vasomotor collapse which, in rare instances, is of shock proportions. In

our series, one stillborn fetus was delivered, after a profound fall in blood pressure associated with the use of this method.

8. The second stage of labor is prolonged and the incidence of operative procedures is increased.

Advantages:

1. Labor pain is completely relieved.

2. No depression of fetal respiratory apparatus occurs as when barbiturates, opiates, and sedative analgesic drugs are used.

3. Bleeding is less, due to the maintenance of normal uterine tone. The sedatives and inhalation anesthetics tend to decrease uterine contractions with resulting poor uterine tone.

Practical Use and Indications for Caudal Anesthesia and Analgesia: Continuous caudal anesthesia is advised for patients with cardiac or serious pulmonary disease, for these individuals should be prevented from exerting themselves unnecessarily. Regardless of the anesthesia used, we chose to deliver babies from these patients upon complete dilatation of the cervix. In some instances of premature labor, we consider caudal anesthesia a much safer procedure than the use of oral or inhalation methods of analgesia and anesthesia. The safety factor in these instances favors the fetus more than the mother.

Obstetrics is that branch of medicine the purpose of which is to secure the delivery of live, healthy babies with the least possible damage to the mother. Any innovation in our armamentarium may be allowed only when the objectives of live, healthy babies and unharmed mothers are properly considered.

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About attitudes—"Everyone happy and friendly. I did not hear a single complaint or criticism."; I do not believe the enthusiasm, friendliness and sociability could be improved."

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About the procedure—

"On the whole the Institute seemed to have been all one could desire. The conduct was exemplary, stimulating, and progressive, all of which will be conducive to a progressive organization."

"The Institute as a whole was well conducted and the interest of the members was appreciable."

"I am glad I came and I hope to go to Philadelphia in 1946."

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Margaret T. Johnson
has completed the course of instruction at the
Institute for Instructors of Anesthesiology
conducted by the
American Association of Nurse Anesthetists
Chicago, Illinois
October 13, 1945

This handsome certificate was presented to each nurse anesthetist who completed the week's work at the first Institute for Instructors of Anesthesiology, conducted by the American Association of Nurse Anesthetists and held in Chicago October 8-13, 1945.

THE ORGANIZATION OF A SCHOOL OF ANESTHESIOLOGY

SISTER SERAPHIA, O.S.F., R.N.
Assistant Director of School of Anesthesiology,
St. John's Hospital,
Springfield, Illinois

The term "organization" means fusion of integrated or related parts into a composite or unified whole. Applied to the modern hospital it means the unification of component elements within each department and the fusion of all departments into an administrative body governing all, through the establishment of uniform policies and procedures. While organized as individual, self-governing departments, technical schools within the larger hospitals must be so constituted as to conform to the functions and needs of all other departments and also contribute to the administrative efficiency of the total hospital organization.

All schools of anesthesiology are thus organized. It is inconceivable that a school of anesthesiology could exist apart from a hospital, for students must have opportunity to apply theoretical teaching to practical situations. Students of anesthesiology must learn by doing and it is stressing the obvious to say that no anesthetist was ever trained, or could be trained, without affording her the occasion to administer anesthetics. I shall attempt to demonstrate how a school of anesthesiology may be organized to coordinate its own procedures and integrate them with the broad organization of the hospital of which it is a part.

Read at the October, 1945, Institute for Instructors of Anesthesiology, Chicago, sponsored by the American Association of Nurse Anesthetists.

A school of anesthesiology in a hospital having an active surgical unit must coordinate its functions under the general hospital organization and its executive as follows:

(1) Departments:
- General
- Pediatric
- Orthopedic
- Maternity
- Contagious
- Tuberculosis, etc.

(2) Medical Staff:
- Surgeons
- Ear, eye, nose and throat specialists
- Pediatricians
- Orthopedists
- Obstetricians
- Diagnosticians
- Chest surgeons
- Genito-urinary surgeons
- Neurological surgeons
- Oral surgeons, etc.

(3) Hospital Staff:
- Surgical supervisor
- Anesthesia director
- Maternity supervisor
- Emergency supervisor
- Floor supervisor
- Dean of nursing school

(4) School of Anesthesiology:
- Chief surgeon
- Medical director
- Chief anesthetist
- Faculty

Efficiency in all hospital organiza-

tions is contingent to and postulated upon cooperation between its various departments and their executives. Each department must also organize for effective cooperation. In a school of anesthesiology, there must be mutual understanding and a spirit of helpful collaboration between the chief surgeon and the chief anesthetist regarding school activities. In the event of divergency of opinion or irreconciliable conflict, the medical director of the school may serve as mediator or arbitrator in the matter.

A chief anesthetist should possess special qualifications for her position, among the most desirable being general administrative ability, mastery of the subjects of her field, ability to organize a working unit, keen judgment, emotional stability under all circumstances, confidence in herself and the ability to inspire it in others, tactfulness, prudence, and a sympathetic understanding of human nature. It may be assumed that a chief anesthetist with such characteristics would also have qualities of leadership which would assure the proper functioning of a school of anesthesiology.

The teaching of anesthesiology certainly demands employment of efficient and up-to-date methods of instruction, for the training of future anesthetists is freighted with tremendous responsibility. Teachers of this technique must impress their students with the fact that they will actually, hourly and daily, carry the fragile vase of human life in their hands. It is needless to say that each step in the process of learning must be administered with scrupulous care on the part of the instructor.

It is a foregone conclusion that members of the faculty will possess better than average professional knowledge, for, as the Latin proverb puts it: "One cannot give what one does not possess." Not only thorough mastery of the subjects to be taught should be demanded, but instructors of anesthesiology should also understand the relationship of this field of knowledge to other sciences and technical subjects. Instructors should not only possess theoretical knowledge of their subject, but in addition, have had extensive experience in the administration of anesthetic agents. They should also be identified as active, professional members of the American Association of Nurse Anesthetists.

The profession of teaching has been said to lend itself most readily to quackery and that it is often the last resort of those unable to qualify in other professions. It has been suggested that such opinions originate in the fact that most teaching is concerned with immature minds and relatively inconsequential situations. Be that as it may with respect to general teaching, it cannot be said of teaching in a school of anesthesiology. For here, teachers and students are face to face with the most vital issue of all human considerations: life or death. Since human life is the most sacred thing in the world, no one has a right to gamble with it. Hence, in a school of anesthesiology, where people are being trained to handle human life, it is not enough that an instructor possess a thorough knowledge of the subjects she teaches. In addition, she should have a comprehensive understanding of the principles of psychology, sociology, and philosophy. Such an instructor should be—in fact, must be—a well-educated person whose experience and training has given her a good perspective of life's varied situations.

Superlatives come easily in describing the qualifications of those who are to

conduct a school of anesthesiology, and the requirements may be judged as too high, yet the standards of this profession must be equivalent to those prevailing in the whole field of medical instruction. A study of anesthesiology does not contemplate a study of medicine per se, but the professional standards upheld by the American Association of Nurse Anesthetists are recognized by the medical profession as justifiably high in view of the necessary collaboration of anesthetist and medical doctor.

A vital factor in a school of anesthesiology is proper supervision of instruction, especially in the case of a beginning instructor. If supervision of instruction is to mean anything, however, it must be based upon objective, not subjective norms. Standardized forms for judging an instructor's method of presentation of a subject are available and may be used to analyze teaching techniques in a school of anesthesiology. These should not be used for fault-finding, but to help teachers improve their teaching and enable students to obtain the best possible returns from time spent in study.

Coordination of various elements within the school of anesthesiology is best achieved by weekly staff meetings between the faculty of the school, the chief anesthetist, and the chief surgeon and medical director of the department. But staff and faculty meetings must be carefully planned to merit time spent at them. There is little justification for any meeting not constructively designed to fill a need. One of the outcomes of intelligently planned, purposeful meetings should be the formulation of school policies.

Although the personnel of a school will necessarily change over a period of time, policies formulated in the light of long experience should not be readily discarded every time such changes occur. Personnel, in other words, is variable; school policies, like principles, should remain relatively stable, changing only when some discovery, technical improvement, or other important factor justifies a revision. From the formulation of sound policies, a worthy program of student training will evolve.

The general subject of student training is intimately related to policies regulating the relationship of faculty and student responsibility. For instance, a fixed policy that no student anesthetist be permitted to administer an anesthetic, except under the direct supervision of a faculty member, is undoubtedly one that most schools of anesthesiology would adopt. Besides major policies determining faculty-student relations, procedures in instruction, standards of achievement for classwork and examinations, and the development of efficiency in the practical administration of anesthetics, minor policies must also be established regulating such matters as standard caps and shoes, hours of duty, health requirements, and the compilation of student records. Once agreed upon, such policies are best announced through printed bulletins over the signature of the head of the school.

Teaching Aids: In establishing a school of anesthesiology, it is highly important that it be furnished with adequate, up-to-date facilities, including the following: (1) modern gas equipment; (2) recovery room; (3) well-equipped classrooms; (4) library; (5) research laboratory; (6) ample student files.

Since a student's permanent school record will accompany her throughout her professional career, it is important that it be accurately and fairly kept. It should also be fully explanatory, so that it will be intelligible to anyone who may have cause to inspect it. Symbols should be carefully explained in footnotes and care taken that such records are headed by the proper, legal names of students.

Theoretical instruction will include general lectures in classrooms, informal conferences between teachers and students, symposia, and panel discussions. Space must be provided for these purposes and classrooms equipped with such necessary appurtenances as blackboards, desks, models, and anatomical charts. Equipment should also be provided for such visual aids as slides and motion picture films demonstrating subjects pertinent to the study of anesthesiology.

VOLATILE DRUGS	INTRAVENOUS ANESTHETICS	RECTAL ANESTHETICS	ANESTHETIC GASES
(1) Chloroform	(1) Evipal soluble	(1) Avertin	(1) Nitrous oxide
(2) Ethyl ether	(2) Pentothal sodium	(2) Evipal soluble	(2) Ethylene
(3) Divinyl ether			(3) Cyclopropane
(4) Ethyl chloride			
SPINAL ANESTHETICS	**LOCAL AND REGIONAL**	**CAUDAL**	**THERAPEUTIC GASES**
(1) Neocaine	(1) Procaine hydrochloride	(1) Metycaine	(1) Oxygen
(2) Pontocaine, etc.	(2) Nupercaine		(2) Carbon dioxide
	(3) Metycaine		(3) Helium

A well-organized school of anesthesiology should have a complete stock of the principal anesthetic agents in general use today, including such recently introduced drugs as curare, demoral, etc. A comprehensive list of such agents follows:

A carefully selected library is an indispensable adjunct to teachers of this subject. It should contain standard professional reference works, authoritative collateral medical literature, and current periodicals covering the field. Students should be impressed by their instructors with the importance of keeping abreast of progressive scientific and technical developments in anesthesiology by unceasing familiarity with contemporary publications. While, despite all efforts, some graduates will stagnate professionally, once they are in the field, it is the duty of teachers of anesthesiology to prevent this, if possible, by insistence upon a thorough acquaintance with professional publications during a student's course of study. It may be pointed out that one of the marks of a genuinely professional person in any field is awareness of recent developments in the area of his special selection.

Curriculum: The school of anesthesiology should offer courses in the following subjects:

Techniques in Anesthesia
Medicine in Anesthesia
Science in Anesthesia
Organization in Anesthesia

Interim quizzes should be given throughout these courses and a comprehensive examination covering the eight months' training given at its conclusion. Final examination should then be given to determine eligibility for membership in the American Association of Nurse Anesthetists.

The professional courses should be accompanied by a study of English composition. The technique of writing, construction of reports and their proper annotation, compilation of bibliography, and other processes of literary research should be taught on a level corresponding to a university course in theme-writing.

It is probable that the time is not far distant when a Bachelor of Science degree will be required of nurse anesthetists, just as it is likely that at least two years' college work will be prerequisite for nurses' training in general. The raising of nursing educational standards was advocated before the war; now that the war is happily over, it is inevitable that this proposal will again be considered. In view of this anticipated change in educational requirements and to make it possible for a student of anesthesiology to obtain credit toward a Bachelor of Science degree, it is eminently desirable that a school of anesthesiology become affiliated with a college or university.

Practical Training: should be given in all activities associated with different types of surgery and planes of anesthesia. Experience in administering anesthetics in the following types of surgical cases should be made available to students:

General	Neurological
Eye, Ear, Nose and Throat	Plastic
	Thoracic
Orthopedic	Obstetrical
Gynecological	Oral
Genito-urinary	

Students should also obtain experience in resuscitation methods and the administration of therapeutic gases. They should be provided with models and charts illustrating the different organs, nerves, sinuses (especially the carotid sinus) which are vitally concerned in the administration of anesthetics. Through such media, students may visualize inflation of the lungs by manual pressure, the importance of positive or negative pressure, rise and fall of blood pressure, and other factors of resuscitation.

Supplementary to such practical training in the school of anesthesiology, students will receive valuable experience through field trips to hospitals where special techniques may be seen, and the demands of different surgeons as to relaxation, etc., understood. Before a student could be said to have had a well-rounded course of instruction, she should have had training in all the techniques of anesthesiology:

Closed (or carbon dioxide absorption)	Endotracheal
	Venipuncture
Semi-closed	Spinal puncture
Insufflation	Rectal
Pharyngeal	Caudal

In Summary: The salient factors in the successful organization of a school of anesthesiology are:

(1) Fusion of administrative policies between the school and the hospital

(2) Coordination of functions between the school and the various departments and staffs of the hospital

(3) High professional and personal qualities on the part of members of the school faculty, particularly the chief anesthetist

(4) Skilled teaching and efficient supervision
(5) Formulation of sound school policies
(6) Appropriate student training
(7) Adequate facilities
(8) Efficient administration
(9) Accurate student records

There can be only one admissible standard of achievement in a school of anesthesiology and that is: absolute perfection, or as near absolute perfection as human effort can make it. Nothing less than thorough mastery of professional techniques and a sure knowledge of the principles of the science can be accepted by such a school. If there is any school which must stand upon principles—objective principles—in turning out graduates, it is a school of anesthesiology. Sentiment dare not rule; excuses cannot be accepted. There must be no doubt as to a nurse anesthetist's knowledge of procedures, mastery of technique, or emotional stability when confronted with emergencies.

The nurse anesthetist has still to prove her right to exist in some parts of the country and to some medical circles. She can best prove that right by being so expert in her procedures as to silence any would-be critic. Apart from such considerations, anesthetists are dealing with human life. Every time they administer an anesthetic, they take a human life into their hands. Only the most skilled, conscientious, and sure should be allowed to grace the ranks of those whose professional duties make them arbitors of the most vital issue of human existence, from its very beginning to the last desperate efforts of doctors and surgeons to prolong life to its fullest possible span.

* * *

WHAT THEY SAY ABOUT THE INSTITUTE, as taken from questionnaires:

About the choice of program material—

"Should be for all anesthetists, not just instructors."

"Material well chosen and presented."

"Perfect and well correlated."

"Best ever. Met demands of every participant."

"Dr. Park's lectures very helpful."

"In addition to the type of material we had, have sociology, psychology of patient and anesthetist's relationship, voice control."

"For a mixed group, very well balanced. Would recommend separate Institutes for instructors and anesthetists."

"When I enrolled I knew it was primarily for instructors. Of course it would be easier to have separate Institutes for instructors and anesthetists and the programs could meet the needs of each group. In this case, I think each group was greatly benefited."

"So well prepared, arranged and presented that it even made many of us who are interested primarily in 'doing', 'not teaching', look around for ways to improve existing conditions in our own hospital and staff."

* * *

About the method of presentation—

"Excellent, I like the idea of first the educator, then the sample and finally correction, comments and suggestions by the lecturer."

"Following a definite outline makes it more easy to follow and remember."

"Real classroom performance. Spend more time in detailed knowledge of anesthesia. Of course in this Institute it was necessary and very helpful to discuss methods of teaching, records, examinations, etc. To me the arrangement of this Institute was very satisfactory, I believe in concentrated effort."

FACILITIES IN THE SCHOOL OF ANESTHESIOLOGY

MARY H. SNIVELY, R.N.
Director School of Anesthesiology for Nurses,
Duke Hospital, Durham, N. C.

Divisional and teaching facilities of a school of anesthesiology are key factors to the success of the project. Proper development and utilization of such facilities are necessary to the operation of the school.

A successful school is not necessarily restricted to the university hospital. Facilities provided by the "teaching hospitals," however, do promote adequate training of the student in anesthesiology. Basic elements necessary to the training of nurse anesthetists demand certain standard divisional and teaching facilities including: (1) a broad scope of surgery; (2) a broad application of anesthetic agents and technics; (3) standardization of technics and procedures; (4) a working knowledge of the mechanics, maintenance, and application of standard equipment; (5) facilities for research.

(1) The broad scope of surgery should embrace at least twelve specialties:

Abdominal	Nose and throat
Ear	Obstetrical
Eye	Orthopedic
Gastro-intestinal	Plastic
Gynecological	Thoracic
Neurological	Urological

(2) A broad application of anesthetic agents and technics is paramount in training the student anesthetist. It should be emphasized that a diversified scope of surgery will provide fertile media for the application of all agents and technics. The organizational plan of the division and a well-trained, experienced faculty should provide for wide use of agents and judicious application of accepted technics. However, to enumerate, student training should provide a working knowledge of such agents as avertin, cyclopropane, ether, ethylene, nitrous oxide, pentothal sodium, and vinethene. She should be equally conversant with the application of the following technics: (a) Inhalation—open drop, semi-open drop, semi-closed, closed, endotracheal, endopharyngeal, controlled respiration; (b) Insufflation; (c) Intravenous; (d) Rectal; (e) Regional—spinal, caudal (single dose and continuous technic).

(3) Standardization of technics and procedures is one of the most difficult problems in the maintenance of a successful school of anesthesiology. Standardization must provide, primarily, a simple procedure which can be fol-

Read at the October, 1945, Institute for Instructors of Anesthesiology, Chicago, sponsored by the American Association of Nurse Anesthetists.

lowed by the entire staff. All standards must be based upon accepted aseptic, physiological, and pharmacological facts. Furthermore, it is important that these basic principles be respected by all divisional personnel. The success of standard policies depends upon adoption of designated procedure by all members of the staff.

The development of the school will depend upon individual initiative on the part of its graduate personnel. Initiative should be encouraged for the educational and professional advancement of the faculty group. Although individual progress is important, competition between individuals within the organization should be discouraged, for such development tends to break down group function.

Many factors enter into the establishment of standards relative to technics and procedures. Each hospital, indeed each division of surgery, contributes its peculiar characteristics and derivations to the development of standard routine. It is not the hospital organization alone, but also the special requirements of various services, surgeons, nursing technics and policies, the condition of the patient, the operative site, operative procedure, etc., to which standardized procedures and technics must be adapted. The success of the school depends largely upon its ability to meet these varied requirements.

Standardization must be applied to:

(a) Equipment necessary to various technics.

(b) Technics employed with various agents, operative procedures, etc.

(c) Positional requirements for surgical specialties such as: craniotomy, frontal and cerebellar; thoracoplasty; pneumonectomy; thoractomy, anterior, lateral and posterior; radical resection

(Ill. A) At top, the intravenous table.

(Ill. C) Below, the storage compartment of the intravenous table.

glands of neck, anterior, and posterior; laminectomy, ruptured disc, spinal fusion, etc.

(d) Oxygen administration, nasal, inhalation, insufflation with various types of apparatus.

(e) Maintenance of equipment: airways; nasopharyngeal tubes; tracheal tubes, connections, and accessories; gas machines, routine care following infected cases or communicable and contagious disease; mechanical apparatus; masks, ether and gas; breathing tubes, bags, etc.; absorbers; special equipment.

In our own division, standards are set by staff conference. Policies are described in a written "routine" which is readily available to everyone. The student is taught these standards by demonstration, after which staff supervision smooths the defects. It may be well to emphasize that as new graduate personnel is appointed to the staff they, too, must attend the demonstrations, make frequent references to the "routine," and through observation, learn the policies of the department.

Standardization must allow for changes which may be necessary as new conceptions of procedure or technics emerge through literature, clinical research, and practical application. The advisability of effecting appropriate changes is discussed at weekly round table conferences.

(4) A working knowledge of the mechanics, maintenance, and application of standard equipment can be acquired through familiarity with a representative assortment such as:

(a) Gas machines—Connell: Stratosphere O.B.; Foregger: Metric, Gwathmey; Heidbrink: Kinet-O-Meter, Lundy-Rochester, Lundy Jr.; McKesson: Nargraf.

(b) Ether Machines — Sorensen; Sklar, Bellevue; "Pump Bottle" (a simple, effective, homemade model).

(c) Laryngoscopic-endotracheal appliances and connections—Scopes: Guedel, Water's (Wisconsin), MacIntosh; Tubes: Magill (semirigid), French Silk Woven (rigid); Connections: Adams, Foregger, Magill.

(d) Intravenous equipment — Syringe holder: Rudder, or an alternative, a stop cock, tubing and 2 cc. syringe; nedles, special short shaft, tubing, connections, etc.

The mechanics and maintenance of standard appliances are taught by demonstration methods. The judicious application of such equipment is first approached by class-room presentation of the theory underlying its use; next, by actual application in the operating room under critical supervision. Our equipment for intravenous and endotracheal anesthesia is shown in the accompanying illustrations.

Intravenous tables include a cabinet, 30″ high mounted on ball-bearing casters and a table top, 19″ x 18″. The cabinet has a rack for armboards on one side and, on the other, a rack for two "E" cylinders of oxygen. Across the back of the cabinet is a folding shelf which serves as a charting table, or accommodates unsterile equipment between cases. (See Ill. A) The table top is draped with the unfolded wrapper of a sterile I.V. anesthesia pack, thus providing a sterile work table. The cabinet contains one drawer, 15½″ wide x 15″ long x 4½″ deep, for tourniquets, oxygen catheters, suction catheters, K-Y jelly, nasopharyngeal tubes, oropharyngeal airways, sterile needle and 5cc. syringe sets, adhesive, etc. Forward in this drawer is a rack

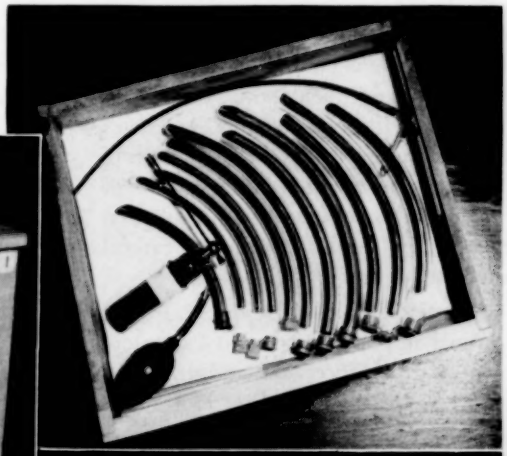
for a jar of alcohol sponges, and bins for ampules of coramine, metrazol, picrotoxin, caffeine, atropine, and distilled water. (See Ill. B)

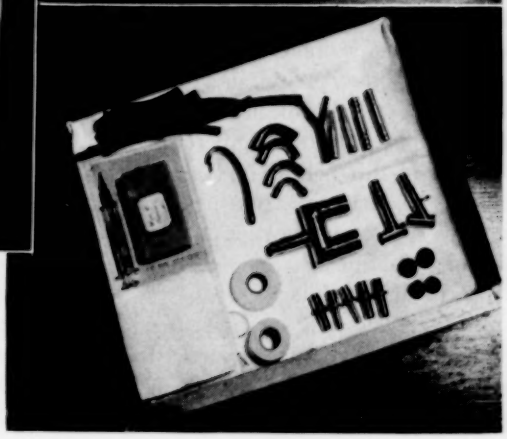
Below the drawer is a closed cabinet, 22″ high x 16½″ wide x 16″ deep, containing a shelf 12¾″ from the floor of this space. The shelf accommodates a complete blood-pressure apparatus, absorbant towels, a 250 cc. flask of sterile distilled water, ampules of pentothal sodium, a syringe holder, etc. The base allows space for the storage of three sterile packs, special single-packaged goods, and head rings. (See Ill. C)

Thus, we have in one table all the equipment (exclusive of a gas machine) necessary to the administration of intravenous anesthetic. Our technics demand that all tables be set up in the same manner (time required to set up a table is six minutes). All sets are cleansed and packed for resterilization in a standard routine. The result is a very convenient technic for all I.V. anesthetics, besides considerable conservation of energy and time, since this technic makes it safe for anyone to use a table set up or used by another.

Endotracheal tables have been similarly constructed. A flat top table, 30″ high x 15½″ wide x 20″ long, is fitted

(Ill. F) At right, endotracheal table drawer No. 2.





(Ill. D) Above, an endotracheal table.

(Ill. G) At right, endotracheal table drawer No. 3.

with three shallow drawers 14¾″ long 11½″ wide x 2½″ deep. (See Ill. D) The first drawer accommodates: scopes, suction tubes, bit blocks, K-Y jelly, adhesive, pharyngeal packs, catheter directors, styletes, etc. (See Ill. E) The second drawer provides for cocaine 10 per cent and neo-synephrin ¼ per cent sprays, glass-encased endotracheal tubes (Magill), spatulae. (See Ill. F)

The third drawer is for special connections, special tubes, cuffs, laryngeal mirrors, and all special equipment. (See Ill. G) Nine inches from the floor there is an open shelf, 10″ x 15″, equipped with an enamel tray.

All equipment needed for the patient is assembled on top of the table and covered with a clean towel until used. Contaminated and handled equipment is placed upon the tray-equipped bottom shelf. This routine facilitates our teaching procedures, providing smooth service with minimum loss of time in caring for emergency intubation expediently, and developing careful attention to detail.

(5) Facilities for research are of cardinal importance to school development, staff advancement, and divisional progress. Organization contributes substantially to the development of research facilities. A division under medical direction is more likely to allow time for laboratory, clinical, and library research because medically-trained personnel appreciate the importance of research in this field. Also, their basic training facilitates the pursuit of problems of specific physiological, bacteriological, and pharmacological significance in anesthesiology.

Clinical research is not possible without a well-organized system of records. Here, again, the success of the system is dependent upon trained personnel able to carry out standardized detail.

The demands of a post-war world will require broad investigative reading on the part of the faculty. A comprehensive technical library is essential to the progressive development of school, faculty, and student. Constant reading of current literature by the instructor is necessary in order to keep classes abreast of recent findings concerning physiological and pharmacological effects of anesthetic drugs. Greater emphasis must be placed upon class preparation, presentation, and curricular management. More elastic methods of theoretical presentation are now being introduced through encouragement of investigative reading.

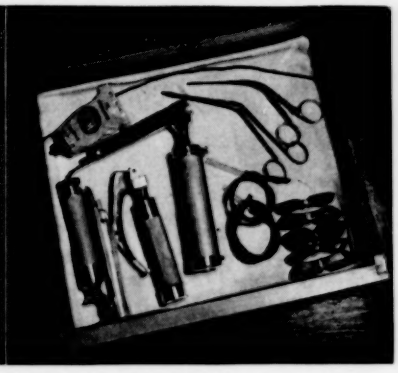
It is, therefore, highly important that the faculty be so organized as to allow time and effort for this phase of teaching development. There appears to be this solution to the problem:

(1) Adequate staffing of the division to allow instructors ample time for wide reading, clinical investigation, and development of literary abilities.

(2) Careful choice of instructor material from among those capable of doing intelligent reading, and who would not be content to teach the same subjects quarter after quarter with no opportunity for stimulating investigation, and preparation of new material.

In summary, I wish to emphasize that teaching and clinical facilities must blend so that "theoretical" and "technical" aspects lose their separate distinctions. The student must first be well-grounded in theory and have a knowledge of the basic sciences, for this alone will enable her to apply appropriate technics to each patient's needs. Next, there must be technical demonstrations of apparatus used, for

(Ill. B) Above, intravenous table set-up.



(Ill. E) Above, endotracheal table drawer No. 1.

such apparatus must become her tool and not her master. Finally, under sympathetic and expert guidance, she must be allowed to apply her technical and theoretical knowledge to a variety of clinical cases in the operating rooms.

The result of such an integrated training program will be a graduate appreciative of the physiological, pharmacological, and mechanical effects of a wide selection of anesthetic drugs which she is able to administer with expert technic. Only broad divisional and teaching facilities utilized by an ambitious, competent, coordinated faculty can accomplish this result.

* * *

WHAT THEY SAY ABOUT THE INSTITUTE, as taken from questionnaires:

About the value received from the program—

"The teaching of proper teaching methods by Dr. Park—excellent."

"I have been to school and learned many things."

"I have a better concept on how to teach my students to express themselves and also to convey correct explanation."

"Stimulated to give better service in my department, more intelligent service, particularly oxygen therapy."

"I feel the program was like a refresher course."

"Educational from theoretical and practical view points."

"I consider this the most interesting and instructive meeting I have ever attended."

"A deeper appreciation of our organization, plus a great deal of information."

"Knowledge of problems of others. Better teaching and supervisory methods. Many things pertaining to equipment which will go for making a better department."

"The discussion on teaching principles and methods has been most valuable."

"I learned a great deal. We should have one each year."

"I have obtained a great deal of knowledge and enjoyed every session."

"I found the entire program very enlightening, interesting and educational."

"The value of others' experiences and methods. Most profitable."

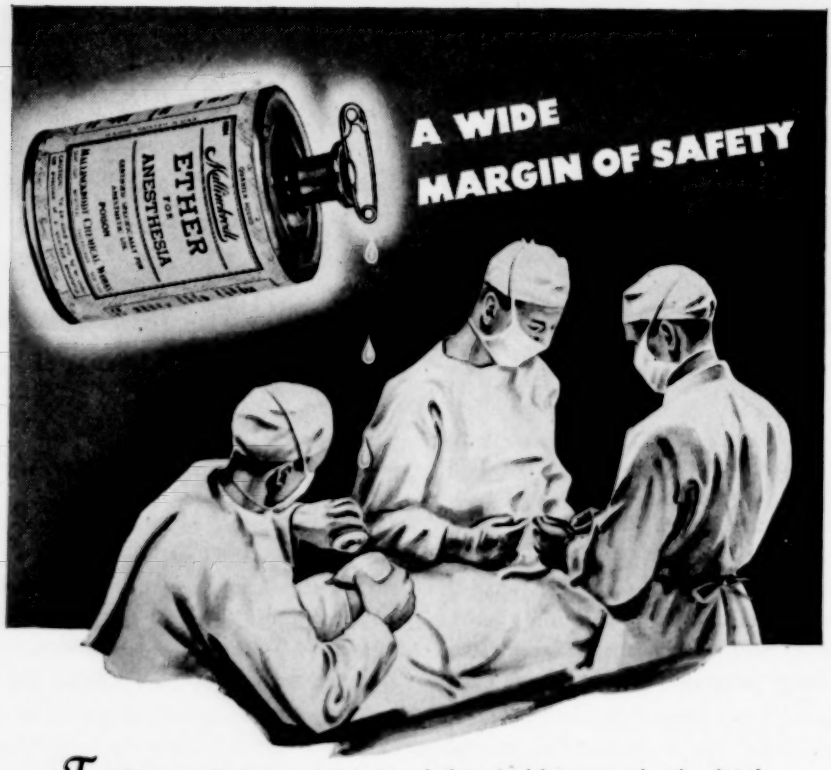
"A broad knowledge of material and educational methods and standards."

"Ideas on new anesthetic agents and better methods. Plans for future education."

"I am not interested in teaching but very much interested in the program for teaching and had no idea of the problems."

"I was especially stimulated in the purpose of the Institute."

"I learned how to present material in a better way."



Two of America's leading anesthesiologists recently stated: "Drop ether still remains one of our safest anesthetics."[1]

Safety of the anesthetic agent is of particular importance for the patient in shock. In such cases, "the safest agent, for experienced and inexperienced anesthetists alike, is ether. Its value has been proved in nearly 100 years of continuous use during which many million operations must have been performed. It is the agent with which we have the most experience, which has the widest margin of safety, which has been most carefully investigated both in the laboratory and under clinical conditions."[2]

For extensive procedures in which regional anesthesia is not applicable, ether and oxygen administered through a gas machine is the anesthetic of choice. The method used should be intratracheal, as it will enable the anesthetist to keep the operative field clear for the surgeon, and eliminates all difficulty in maintaining a free airway.[3]

1 Editorial: Anesthetics Old and New, Anesthesia and Analgesia, 23:44, Jan.-Feb. '44.
2. H. Blair Gould: Anaesthesia for the Patient in Shock, Anesthesiology 5:129, March, '44.
3. Major C. F. McCuskey: Anesthesia At The Front, The Military Surgeon, April, '44.

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Institute's Educational Forum Features Doctor Joe Park Of Northwestern

The accompanying material is a direct reprint from the verbatim report of the Institute for Instructors of Anesthesiology, conducted by the American Association of Nurse Anesthetists October 8-13, 1945 in Chicago. Dr. Joe is a distinguished educator at Northwestern University.

The first Institute for Instructors of Anesthesiology conducted by the American Association of Nurse Anesthetists met in the Knickerbocker Hotel, Chicago, on Monday morning, October 8, 1945, and was called to order at 9:15 o'clock by Mrs. Esther Myers-Stephenson, Director.

MRS. STEPHENSON: This Institute was designed principally for Schools of Anesthesiology so that we could conduct this meeting as if it were a regular college classroom in practice teaching. To those who are in schools it will help to know how to teach different subjects, how to present material and also to know the fundamentals that go into teaching methods. curriculum construction and testing. To those who are not in schools it will give an introduction into these things which they would get if they were in a college classroom but there they would not have the opportunity of having it applied to anesthesia.

We are hoping to make those who are not now in schools prospective instructors at some time. We want you to have the desire to teach because we need teachers. So think about it as you go along.

We hope the Institute is what you have looked forward to its being. Tomorrow or the day after you will receive a questionnaire, and when it is passed out we will explain its purpose. We think there is a need for more Institutes. We are going to ask this representative group to fill in this questionnaire and hand it in by Saturday so that we will know what we should do when we put on other Institutes.

In the conduct of the program we plan for it to be like a classroom practice teaching presentation, and in that respect we are asking for group participation. Ask questions when they occur to you.

We are very fortunate in having our President with us here this morning. She has just finished a very hard, strenuous Board meeting that took almost all of last week from the early hours of the morning until late in the evening, but she has stayed over in order to be here with us this morning. I am very pleased that she did so, and it gives me a great deal of pleasure to introduce Miss Hazel Blanchard, the President of the American Association of Nurse Anesthetists.

GREETINGS

MISS BLANCHARD: Madame Chairman, to welcome the members of the Institute is one of the pleasant duties of your officers. We have undertaken something that we hope the members want. If it is a success, it is due to the attendance here this morning.

Today there is a challenge to every member of the Association to meet the responsibilities of tomorrow. The Association wants to do everything to help the members in every way to meet those responsibilities, but preparation must be begun today to meet those responsibilities of tomorrow.

This is the first Institute of this kind that the Association has ever put on. We want you to be thinking of what you want in the future. Is this the kind of an Institute you want? How can it be planned so that it will serve all the members and not a particular group, perhaps? Where do you want the next Institute and what time of the year?

Those are the things that the Association Board must know in order to help the members have the thing they want.

The Schools are important to the profession; they are also important to the Association. But the members here today who are not members of Schools have a contribution to make in that they can express freely their opinions on what the graduates are doing, how strong they are or where their weaknesses are. By doing so, they will help the Schools to correct weaknesses and turn out better anesthetists.

The Institute has been made possible only because the Chairman, Mrs. Stephenson, has accepted a challenge. It has been a big undertaking. I don't think any member here appreciates it. It won't be perfect this year and we want to improve on it, but only if you tell us how we can improve on it can we accomplish what should be done.

I think we should recognize what Mrs. Stephenson has done. When the Institute is over you will have a greater appreciation of her performance.

WELCOME

DR. HULLERMAN: The program which has been set up for you this week looks very, very good. You have an excellent prospect for five very instructive days.

We have found in Institutes of the American Hospital Association that there are two measures of interest on the part of those enrolled. The first one, of course, is the degree to which you attend the meetings and it is essential, in a concentrated course such as this, that you make every effort to be present at every scheduled meeting. The second factor which makes for a good Institute is a rather free expression and discussion in the periods assigned for that, and by that I mean discussion by the audience which is frequently in position to bring up problems that otherwise would not be discussed.

With respect to anesthesia, you know that nurse anesthetists are extremely vital to hospitals. They are so recognized by hospital administrators and by the Association, and this is true for small hospitals and also for large hospitals.

I believe that your Association has over three thousand members, which gives you an idea, when you consider that there are only about six thousand registered hospitals in the United States, that there is at least one nurse anesthetist in the organization for every two hospitals.

The importance of your group to hospitals — and of course when I say "hospitals" I mean the medical profession and the patient — is directly proportional to the extent of your training. For that reason we are glad that you are interested in attending this

Institute.

Because the American Hospital Association does recognize your importance in hospitals, I am glad to extend to you this morning the greetings, on behalf of the American Hospital Association, and I feel confident that you are going to have a very, very good week.

CURRICULUM CONSTRUCTION

By Joe Park, Ph.D.

You folks are dealing in many instances with exact sciences. In the laboratory you are able to mix chemicals and you know what you are going to produce. I can only use the most simple and trite example but if you mix in correct proportions hydrogen and oxygen, you get water.

In the classroom you sometimes mix together certain elements and get anything but what you expected. In curriculum construction, in methods of teaching any of the social sciences (because education is a social science) you are never sure exactly what it is you are going to produce by any particular mixture. You can only plan and hope for outcomes.

Back of any course of study that you people may write, behind any curriculum guide that you may produce, you will of necessity have some philosophy. Don't be frightened by the term "philosophy." You must have some essential beliefs which you have decided upon and are willing to stick by that will undergird the course of study which you produce.

I should like to discuss briefly with you five philosophies of education. In education, I think we may summarize by saying that the five basic philosophies are these: The first and most conservative is the Aristotelian philosophy of education. The Aristotelian is conservative; he is a gentleman who believes in essentials, in essential facts which are to be taught to students because they are essential, and we may point out a gentleman of whom some of you may have heard, Robert Maynard Hutchins of the University of Chicago, who is considered to be an essentialist, as is Mr. William Bagley, who is editor of "School and Society," a magazine which I am sure you have all seen one time or another.

You are aware of the fact that Mr. Hutchins or Mr. Bagley, perhaps, is willing to say that there are certain great books which every individual ought to read, if he is to be completely educated or to have a liberal education. You know that Mr. Bagley, for instance, believes that there is certain subject matter in history, in mathematics, in English and literature which, because of its very character, should be included in every curriculum and required of every student. So much for the essentialist, or as we have labeled him, the Aristotelian.

The next three that I am about to describe are put in the middle, so to speak, so that you can see that there are not merely two great extremes existing in the field of education; however, we do usually argue in terms of these extremes. I shall very briefly discuss the three middle philosophies.

The first of the three middle ones I shall call the Thomistic philosophy which is the philosophy of the parochial schools. I think that McGucken has summarized it very nicely when he says that the primary purpose of any program in education is to train people to know and to love and to serve God in this life in order that they may be happy with Him in the next.

We have some other people whom we shall call idealists. They believe somewhat like our friends, the essen-

tialists, that there are certain essential things to be taught, but they are not concerned so much with facts as they are with the ideas that people possess. That is, there are certain ideas or, if you prefer, ideals which should be taught to every one.

The third and last of the middle group we shall call the realists, and when discussing the realists, I am always reminded of the Republican Party of 1912. You remember that in 1912 the Republican Party split and there were some Bull Moosers, isn't that correct? You check me on my history. The Republican Party split, and there were some people who stayed with the Republican Party, and there were some who formed a new party. The old element of the party we shall call the realists in this instance.

But now the fifth group that I wish to talk about is a group known as the pragmatists. They are the pragmatic individuals who want to make everything practical. By the way, they split off from these realists, in case you were lost somewhere along the line because I didn't make myself quite clear. These pragmatists believe that education should be concerned primarily with the needs and interests and the practical side of what goes into a curriculum. That is, if one were to write a curriculum from the standpoint of a pragmatist or from the standpoint of persons whom we normally call the progressive educators, the curriculum would be written from the standpoint of practicality.

You immediately can see that you can open yourself up for a terrific verbal struggle, and the question might well run like this: Are there certain essential facts which we must include in our curriculum which are time proven or are upheld by certain authority? Some people say Yes and some people say No. The essentialists say Yes, you see, but the pragmatists or the progressives would say "Now I am not so sure that we ought to select curriculum content on the basis of what has gone before. Rather let us experiment to see what we ought to put into our curriculum based upon the needs and interests of the individuals who are to be taught in our classrooms."

I think that lays open the problem of philosophy, and if you folks are going to decide how you are going to construct your course of study, you are going to have to agree, at least 51% of you, on some sort of basic philosophy.

There are three recognized manners in which one may select and organize curriculum materials and you will immediately see that these three hinge on the question of philosophy. There are some people who say the teacher isn't necessary at all. Oh, she is a sort of an unnecessary appendage to the classroom. There have been people who have said that we don't need teachers; all we need is equipment, phonograph records, slides, motion pictures. The teacher can take a back seat. Thomas Edison had that idea once upon a time.

There are those who believe that the teacher is a sort of an unnecessary evil, at best; that the student in the classroom should propose problems relating to the subject, or life in general, and that these problems should be studies by the group.

There is a second group who believe that all you need in a classroom is a good textbook and that you start on page one, and you go through the textbook, giving a reasonable amount of assignment for each session. Under this procedure, the first day the teacher might say "We have to cover fifteen pages of this book per day. At the end of the second day, you are supposed to have read thirty pages, at the end of the third day, forty-five pages" and so on through the book. That is not too uncommon a procedure, but it does not take into consideration the difficulty of the text book or the individual differences of the students.

There is a third group which believes in the teacher-pupil or teacher-student method. I firmly believe that most teachers in any classroom situation ought to know more about the subject than the student, and therefore they are in position to select and to guide students better than students can guide themselves without the aid of the teacher. In any curriculum set-up, I would always recommend that the teacher have a major part to play, but I would never recommend that the teacher be the single source of activity in the classroom.

Your curriculum of necessity will have to be a teacher-planned one, I believe, if it is to be successful, but always it must take into consideration the students.

At this time, I should like to discuss certain terms such as "fusion," "integration," "core" and "correlation." I believe from the outline I have seen, that you folks are proposing somewhat of a fused course. That is, that the subject matter is not split off into small compartments, but rather joined together, amalgamated, melted together, fused.

I think also you will have in your guide, if it is possible to have it, that which we call in education by the rather confusing term "correlation." I am not speaking about statistical correlations but rather the relating of subject matter from field to field.

You folks know all about anesthesiology. I don't know anything about it. I will have to bring my examples to you from secondary education. I think you can illustrate correlation best by saying that the teacher who teaches English would teach the subject of the literature of the Civil War about the same time the teacher in the history class would be teaching the contents of history on the Civil War period. Both teachers would try to show the students certain relationships between the literature which they read and the history which they study.

I have worked with college students enough to believe it is true that the college student in many instances is failing to see relationships of content taught in one course and content taught in another course. It seems to me where you are producing a curriculum guide such as you folks are, and your schools are small enough, that you could get your faculties together now and then so it would be possible to correlate as closely as possible the contents of one course with another, not always necessarily the historical line of correlation, but at least try to show the students the relationship of that which you call your basic sciences and your third unit which deals with professional ethics, and your first unit which deals with the subject of anesthesiology in its fundamentals.

I want to deal briefly now with techniques for the selection of content to put into a course of study, and I want to deal with this under three headings. The first is the survey method or technique. When you use this technique, you are looking about to discover what everybody else is doing. From others, you copy with little or no originality. It has been described by one educator as a paste, paper and scissors technique. But there is one great disadvantage in the technique described; it is that if the other people are making mistakes and are not eliminating them from their curriculum guides, you may be copying a lot of mistakes that other people have made and you are not very apt to make much progress,—you will not have very much of a forward look.

Let me illustrate here parenthetically that in education we have had quite a running of the mimeograph in producing courses of study. Columbia University alone has 40,000 courses of study on file, which would indicate that few schools seem to be satisfied yet. Many of those courses of study are the products of what we have called the

survey method. I don't believe you folks are using that technique. I believe you are using a committee technique.

With the committee technique, of course, just as the name implies, a committee is chosen. The members are supposedly outstanding in the field. The members of the committee come together, pool their best thought on the development of the curriculum. Perhaps they have previously used the survey method and gotten some ideas. Then the committee might proceed to produce the very best course possible for the local situation, always keeping in mind that it is not to be satisfied only with what is being done, but trying always to be creative.

There is another method known as the job analysis technique, and I think it has some possibilities and might well be applied in your situation. By "job analysis" we mean analyzing the various jobs which the students will have to do when they leave the classroom and to give them training in performing those jobs while they are in the classroom. Educators are never satisfied with terminology; they are always having to change it. We no longer refer to this as job analysis. I used the old term because I think it is a little more explicit. We now speak of competencies, but it is the same thing.

What is it that the student will need to know to perform the job when he gets on the job? By carefully analyzing each and every step that the prospective student will have to take when he gets on the job, it is often possible to add new and important items to the curriculum.

I would therefore like to suggest to your committee that it consider the possibility of using the job analysis technique. You may already have used it, I wouldn't know. But I have a hunch that if you haven't, you might find it of some benefit.

It has been my pleasure to look over your curriculum very carefully. I have made several suggestions in a letter to Miss Campbell, your Executive Secretary. I would like to review these for the group at this time as some of you may not know what they are. I propose them in the utmost humility because you probably know far better than I what it is you want to put into the curriculum. I am afraid I am operating in a strait-jacket of techniques of curriculum construction rather than being guided by a knowledge of the subject plus some understanding of how other people have gone about developing a curriculum.

First of all, I would like to compliment the individuals who have worked on your curriculum to date. It is apparent that the committee has approached the problem intelligently and that it has done considerable work which is worthy of your consideration and approval.

However, I should like to suggest to you that you consider anything that you approve at this convention as a tentative course of study, subject always to change and modification as you have an opportunity to test it out in the classroom.

I don't know whether my second recommendation is a practical one or not but I believe it is. I should like to recommend that the committee, or this organization consider the possibility of having some one or two schools elect (and I mean elect) to experiment with the new tentative course of study and that at some later day the schools participating in the experiment report on what success they have had and make recommended changes. I want to substantiate this point.

Your schools have gotten along all right to date. They haven't fallen to pieces, and you don't necessarily have to have a new curriculum for all schools next week. That is, you could get along very well, I suppose on what you have

been doing. That may not be true in all instances.

Secondly, I should like to say that in public schools where they have tried to make radical changes in all the schools of the system, almost invariably they have run into considerable criticism on the part of the students and parents. In trying to institute a new program in all the schools, in any particular school system, it has generally led to confusion and has caused, in some instances, retrogression rather than progress.

The third thing that I'd like to recommend is that any curriculum guide that is produced be short. That is, a long curriculum guide is less apt to be read and followed while a short curriculum guide is more apt to be used and read.

I have an idea that the committee is trying to keep in mind the usability of any guide, something that a teacher would have as a tool in the classroom. I am sure that any curriculum that the committee has considered is to serve that purpose, not just something to be produced in order to be producing.

I should like to propose the following general outline for any curriculum guide which is produced. I have seen the one which has been mimeographed and placed in your hands. I will not make any comments about it at this time.

I think it would be well for the committee to consider a short fore-word, and perhaps acknowledgment to the individuals who have served on the committee and have helped produce any curriculum guide which you eventually choose to adopt.

There is always the question of what should be included in an introduction to a curriculum guide. The curriculum guide which was handed to me dealt with a number of subjects which were not, I felt, directly concerned with what should be taught in the schools but rather dealt with some administrative problems such as selection of teachers, admission of students, etc. I don't know whether you want to include such. If you do, I think you'd want to put such in a separate part of the curriculum guide, say somewhere in the introduction. On the other hand, it might be well to leave such for other committees to study, thus eliminating it from this guide.

The next point I should like to make, and this I believe is fundamental; it grows right out of the philosophy which we started to discuss this evening at the beginning of this hour; the aims, the objectives, the purposes must be clearly stated in a curriculum guide. That is, you ought to have some landmarks or, if you wish to put it in different terms, you ought to have something that you are shooting at, something that you are aiming to do, or putting it in still another way, you ought to have something that you propose to do when you teach the subject matter.

Isn't it true that the most important thing is to have an excuse for doing what you want to do, a purpose for it and that the subject matter be selected to achieve the purpose?

The purposes are more important than the subject matter because they are the guiding lights in the selection of the subject matter. The subject matter merely helps you carry out the aim or purpose which you have in mind. Therefore, I suggest that careful consideration be given to the selection of aims or purposes.

Lastly, the matter of reading and content. You necessarily have to have some reading. An instructor cannot cover all points in a lecture. Furthermore, there will be the necessity to have in the hands of the students materials beyond their notes for clearing up of items and for study. I would like to recommend that you very carefully select any reading material.

I am not criticizing the committee as to whether it has or has not selected the references with care. If they have, well and good. Some educators suggest a few well-selected readings which instructors can expect the students to read. Then if there are other references, these may be put under suggested reading and the students can read them if they want to.

I think that for a class lecture 25 or 30 pages of reading is about all we can expect of adults, especially if the material is deep. In a word, it is most desirable that you keep uppermost in mind that the subject matter has been selected for carrying out the objectives, that the objectives hinge upon the philosophy, that the philosophy is an agreement on what you are trying to do, what you believe in educationally. Finally you must realize that the best course of study is impotent in the hands of a poor teacher.

The only further suggestion I can make at this point is that you give your blessings to the committee, that you work out your program and experiment with it over a period of years.

Springfield, Missouri has been experimenting with a course of study for sixth and seventh grade children for eight years. The teachers say they would not propose that any school go into any curriculum change with the idea that their problems could be solved in a matter of months. I pass that on to you.

It has been a pleasure to talk with a group of people who are interested in education. I understand we are to follow what I have said with an "Information Please," and if you will tell us what to do Mrs. Stephenson, we will try to do it.

DISCUSSION

MRS. STEPHENSON: You mentioned aims, objectives and purposes. How do you differentiate between the three, or do you use the words interchangeably?

DR. PARK: I always use the words interchangeably. "Aims" I heard so much when I was in teachers' training that I don't want to hear it any more, but I use the word because people frequently still use it and there is no reason why you can't use "objectives" or "purposes." I think the word "purpose" best describes what we are interested in. You see, if you have a purpose, you always ask yourself, "Why am I going to do what I am going to do?" and if you don't have an intelligent answer for it, you just don't do it. You try to think up something else to do.

MRS. STEPHENSON: You mentioned and described what you meant by "fusion" and "correlation" and you did mention "integration" but you didn't explain it.

DR. PARK: I think it is just as well I not describe that. "Integration" and "core" and "general living" are three terms again used interchangeably in education.

I am going to move over to the blackboard if there is any need to describe these terms. I think I can best do it by drawing.

When we went to school we had separate subjects. I had an English class, I had a geography class, I had reading and then I had composition and then I had grammar. English was broken into three separate subjects. We call that, for the sake of clarification, separate subject organization.

"Correlation" can best be illustrated this way: Four teachers met in the hall and said, "Let's get together. You are teaching this. I don't pay any attention to what you are doing," and the English teacher said, "Why, I always teach the literature of the Civil War about the same time you are teaching the Revolutionary War in your history class. Why not pool them?"

And the music teacher said, "Yes, I can teach Yankee Doodle at the same time."

So they, by agreement, decide to teach in their separate subject areas using similar material if it can be related in any way.

Some people say that isn't going far enough. Some people say, "Just abolish the whole thing and put it into one classroom organization — the English teacher, the Social Studies teacher, the Science teacher and what have you; let them all get together and let them teach what they want to as a committee of teachers." That is what we shall call "correlation" or "integration" or "general living."

I left out "fusion." We used to have history and geography and economics and political science. "Fusion" is merely the combining of subjects within a subject matter area such as social studies; jamming them all together and calling them "social studies." The reason we had to do that in education is the same reason you folks are going to have to do what you are going to do, namely: That we don't have time to teach everything and we have to cut down. You can't teach geography five days a week and history five days a week and physics five days a week and mathematics five days a week; there just aren't enough hours. So we cut down on the number of subjects by means of fusion, correlation, integration and what have you.

MRS. STEPHENSON: Dr. Park, do we understand that you feel that when we are making a curriculum guide we should confine that principally to the course of study, and that these other things that should go into the executing of that course of study should be a separate and distinct part?

DR. PARK: I think you have to consider those separately. At least I recommend that. You don't have to, but I think if you'd concentrate on the matter of objectives, first of all philosophy and then objectives, then the subject matter for the achieving of those objectives, which of course involves selection of readings, activities, etc. that is your main problem in your study guide or curriculum guide.

The matter of admissions, while it has some bearing on the curriculum, isn't directly concerned with the matter of selection of content, achieving of objectives or purposes.

MRS. STEPHENSON: What about the faculty who will be teaching?

DR. PARK: There are only three or four problems in education. One is *what* are you going to teach, then *when* you are going to teach it, *how* you are going to teach it and *who* is going to teach it. Of course the most important one is *who* is going to teach it. I think your curriculum is secondary; the most important thing is the teacher.

I don't believe I have answered your question. Of course I don't know anything about the situation that you have to face in the selection of teachers, but I would certainly emphasize the importance of getting the very best person you can, and don't let me be misunderstood this time. There have been so many educators who have been misunderstood on the point of method versus subject matter and personality versus subject matter. I don't think it is an "either or" proposition. All three of them are so important, but above all you must have a teacher who *knows* her subject.

As Jean Smith down at Indiana University once said, "Teachers are born, not made, but we don't have enough of them born so we start making a few of them."

That is why Schools of Education have developed—to make a few of them.

I would not select a teacher who did not know something about her subject. I'd want a person who is agreeable, that you get along with, that the student will probably like. I think she would need to know something about

methods of teaching because teaching can be made more easy by knowing certain little devices, technics. I will talk about that tomorrow.

MRS. STEPHENSON: When I wrote and asked Dr. Park to talk to us on these three subjects I said to him, "This is a very hard assignment. We don't expect you to teach in one hour what you would teach in two semesters. The thing that we want is an orientation on what we need to know in order to organize a curriculum or to teach or to test."

So he is just giving us an introduction to what we need to know and then we will pursue our studies in other directions, perhaps at Northwestern University.

We have part of our Curriculum Committee here. Miss Webb could not remain, as I mentioned before, but her two very loyal and helpful committee members are here and are going to serve you in the best way they can. Remember, these people have full-time jobs and are busy and they have worked very hard on this report.

Will Mrs. Silver and Miss McMahon come up and if there is anything that is relative, any questions that come up that either one of them will not be able to answer or that Dr. Park can answer better, he will do that. We now want group participation in this outline.

Are there any questions or comments?

MISS McMAHON: My question concerns the correct method of formulation of objectives. Dr. Park, do you think that the objectives should be stated as teacher objectives or student objectives, or do you think that is splitting hairs?

DR. PARK: Well, I don't know. That is a long involved question; but I'd like to ask a question to answer the question. How can teachers write student objectives, anyway? You are always writing teacher objectives. I believe that you hope that these objectives will be the best possible and those which you want eventually to achieve with your students. Technically, it is impossible for a teacher to write student objectives. They are what the teacher wants the student to get out of the course. That is the way I'd interpret it.

Some people have gone so far, even, as to say there ought to be student objectives and teacher objectives and the teacher writes both sets. Some people say, "Let's go even further. Let's have general objectives and specific objectives."

MRS. STEPHENSON: Miss McMahon just asked Dr. Park if he meant that facilities should not be included in the Curriculum Guide.

DR. PARK: I personally believe they should not because you either have them or you don't have them; you either use them or you don't use them in achieving your objectives.

You can challenge me on this, I am willing to back down if I am wrong, but I don't see how (unless it would be just good propaganda) it would be of much value for you to have a list of these things in a course of study. How would you use them other than to read them? Let's just ask the question; I don't know the answer.

MISS McMAHON: It seems to me that in our position this is necessary because we are just beginning to try to improve our educational standards and these are questions that have been asked by a great many of the schools—"What should we have? What do we need for teaching? For instance, how many cases per year are we going to need in order to give our students enough clinical experience? How many instructors should we have?"

There are problems peculiar to the field of anesthesiology which will have to be explained in detail, I believe, so I think that in our position it is necessary that we have all this information while we are getting started. We probably won't need it after every school

has revised its curriculum.

MISS SHUPP: Dr. Park, what would you suggest, then, as an auxiliary piece of equipment for us to have aside from the Curriculum Guide to contain all these things? For example, we are hoping before long to have an accreditation program, the schools will be accredited or approved and there are minimum standards that they will be held to and in those minimum standards it will say, as do all the allied field minimum standards working within hospitals that are approved by the American Medical Association, what they must have in the way of equipment, what they must have in the way of facilities.

If we don't have that somewhere within our organization, how can we guide our schools other than with the course of study that is going to be condensed?

DR. PARK: Well, the course of study guides that which takes place in the classroom. I am trying to define it now. As I see it, it would have mainly these parts: You will probably want some sort of a very brief introduction. You might conceivably deal with these in the introduction: How much of a course of study or study guide is designed primarily to set forth the objectives or the purposes, to outline the subject matter, and to suggest the activities which the student would follow in achieving the objectives, which means that such matters as accreditation, admission, selection of teachers, certification and so on might conceivably be dealt with as independent problems and be given the consideration of which they are worthy.

I'd like to say this: You have a committee which is expected to work. Please don't misunderstand what I am saying. I am not criticizing anyone; I am just trying to think. I may think incorrectly and if so I want you to tell me, but you have a committee here which is pushed terribly with a normal load of work. Then you ask the committee to prepare a Study Guide and then you ask the committee to prepare, if I understand it correctly, at least some tentative suggestions for admission, selection of teachers, etc.; any one of those problems would be as much as an ordinary committee could study and work on.

I know you have an unusually capable committee but I would not for a moment think it fair nor do I think it appropriate to include in a Curriculum Guide all these various items. I realize that when you are starting you have these problems, that you will have to consider them, but you have some other people in this organization with talent and you might ask two or three people to discuss the matter of admissions and present their views to the group, just as the Curriculum Committee has. You might well ask two or three other people to take up the matter of selection of teachers. All these problems are worthy of consideration.

I do know that America has several bad habits. One is to vote on everything and the second is to have a committee to do everything. But I believe that perhaps two or three committees, each having a separate problem to work on, would make it easier to define that which you are trying to do and would make your study guide that which I think the study guide is supposed to be, and this is not the way to state it, but I am going to over-state my point to make it clear: That is, an outline of subject matter.

MRS. STEPHENSON: That would mean that we would have just the course of study, the subject matter, by the Curriculum Committee, per se; then have other committees study the other qualifications and the things that are necessary to execute the course of study and label it as something else.

Some of these schools of Anesthesi-

ology use all kinds of equipment, when these students go out they are familiar with all kinds; others have only a few types of machines. The schools want to know, "What can we do? What do we need?"

What will we head that if we don't call it Curriculum?

DR. PARK: I don't know. I guess you'd have one committee studying admissions. Let's take a practical example. If you don't mind, I have to speak from my own experiences. At Northwestern, we have an undergraduate committee in the School of Education which considers what shall be the admission requirement and what shall be the sequence of courses that these individuals should take after they are admitted. It doesn't do anything at all with the curriculum, as such. We have a separate curriculum committee.

There are a number of regional organizations in the public schools. For example, the North Central Association more or less governs this area. It doesn't govern it in the sense that a State governs a territory, but at least it sets up requirements for accreditation. That is, for a school to be on a list of approved institutions, it must meet these requirements—1, 2, 3, 4, 5 and so on.

Those requirements have been set up by this accrediting organization made up of representatives from schools within the area. Do I make myself clear?

MRS. STEPHENSON: Let's go into the subject matter. As you look it over, you will see that there are 120 hours that are given to the course in anesthesiology. Before we go any further, does anyone have anything further to say about the 120 hours? That is classroom theoretical hours. Is that right, Mrs. Silver?

MRS. SILVER: Yes.

MRS. STEPHENSON: That is based on how many minutes in an hour?

MRS. SILVER: That isn't definitely settled.

MRS. STEPHENSON: It hasn't been definitely settled whether it is a 50-minute hour or a 60-minute hour. I imagine that will come out in the regular curriculum.

MISS SHUPP: If you cut that down to a 50-minute hour, is that not going to make a difference when you come to evaluating the course in anesthesiology as far as the colleges and universities are concerned?

MRS. SILVER: Ours is based on a college hour.

MISS SHUPP: They are mostly 60-minute hours, aren't they?

DR. PARK: No, I think most college hours are 50 minutes. We are on different time in universities and colleges than anywhere else. We have only 50-minute hours.

MISS McMAHON: The committee hasn't finished the Curriculum Guide but it is my opinion that the stages and signs of anesthesia should be taught as a master pattern, using ether anesthesia, that in the later units when discussing the various anesthetic agents the signs of each anesthetic agent can then be compared to this master pattern of ether anesthesia. I think that the student will become confused by bringing in all of the variations at first. She must know the normal or expected signs of anesthesia before she can possibly understand all the normal variations.

So it seems as though it would probably be better to concentrate on one sign and then bring the variations and abnormalities in later after she has had a chance to learn the first principles.

MISS DECKER: What is meant by "Orientation to Anesthesia?"

MRS. SILVER: "Orientation to Anesthesia" is the first hour the student is in the classroom, the first day she enters the class or the School of Anesthesiology. She is taken through the hospital and is told about the various departments of the hospital and then we take her or have taken her to the

classroom and have told her about our physical set-up of the hospital and also of the department to whom we are responsible, the Director, the Medical Director and the Supervisors, and we are also responsible to the Superintendent of the Hospital or to the Director of Nursing; to whom the students are responsible, what we expect of them during their course while they are there, the rules that are laid down by the School of Anesthesiology.

MISS McMAHON: I would like to ask Dr. Park what he thinks is the best method of correlation between clinical experience and theoretical instruction, particularly when it is a very complicated procedure to learn.

DR. PARK: I would say this as a general statement: If at all possible, there ought to be a relationship between that which is going on in the laboratory and that which happens in the classroom or any operating room, I should think, and every opportunity the teacher has to point out to the student that "This is what we talked about in the classroom. This very same thing is happening in the laboratory of the operating room." It is his teaching responsibility to do that.

I do not believe, however, that you can write all those particular suggestions into a course of study. After all the teachers will vary and it will be up to them to point out to their students the relationship between that which is happening in the classroom and that which is happening in the operating room or in the laboratory. I assume that you do have a separate laboratory and that you do have an operating room and then you do have a classroom.

MISS McMAHON: Our laboratory is the operating room.

DR. PARK: I was afraid of that!

Anyway, the point I make is that it is up to the instructor to point out the relationship, and I think that just one of the things the teachers often do (and I am guilty of it), we assume that children or adults understand when they haven't had the experience that we have had and therefore they do not understand.

DR. PARK: May I ask a question? This is asked out of pure ignorance but I want to satisfy my own curiosity. You have here under Unit V, Liquid and Gaseous Anesthetics. One is 13 hours and one is 14 hours. I wonder about that division of time. I am not criticizing you at all; I am just asking for information. I'd hate, personally, to in 8 hours I'd yet have to spend 13 on it. Do you see my point?

It seems to me that there might be something said in favor of giving the teacher just a bit more liberty. I think she will exercise it anyway.

MISS McMAHON: This was one of the things that the Curriculum Committee had quite a long argument over. The pharmacology has been included in the course on Fundamentals of Anesthesia, rather than being taught as a separate course of study. Whether it's right or wrong we haven't decided as yet, and I think it would be very interesting to get someone else's opinion. I think that it would be a very good idea if we would all look up the meaning of the word "pharmacology" and just what the study of pharmacology includes. I think that we would find that the study of pharmacology includes all these things that have been mentioned, all of the physical, chemical and physiologic properties of a drug, the method of administration, the contraindications and the indications for that drug, so that actually it is probably superfluous to have all these other units. It could probably be called pharmacology and cover it very well, but for the sake of emphasis in view of the fact that we have to emphasize certain parts, we have brought in this other course, "Fundamentals of Anesthesia," but it would seem to me that there would be less confusion, perhaps, if we had two

separate courses. What do you think?

MRS. STEPHENSON: Dr. Adriani's definition is that pharmacology is the action of drugs on the body, but that does not take in the advantages or disadvantages, contraindications or indications.

DR. PARK: I want to say just one other thing. I am harping on this matter of division of time. I am fully aware that it is necessary to give some general indication of division of time in such a course as you are teaching because each and every element of subject matter would appear to be vital; in fact, the life of a patient might by a layman conceivably be hanging in the balance and you wouldn't want something to happen in your course of anesthesiology similar to what has happened in many a history class.

They start out with the Colonial period and get up to the first World War and the end of the course has come and they haven't any time to teach that which has happened since 1918 in the history class. I shouldn't think you'd want that to happen in the courses you are setting up here. Therefore, you will have to have some sort of a division of time.

I was merely trying to question the very minute specifications.

MRS. STEPHENSON: I'd like an expression from the schools of what they think. It is a problem within the committee and they need your help. Do you think that pharmacology as labeled, per se, should include everything, advantages, disadvantages, the indications, the contraindications, the precautions and the technic of administration? Should that be included in pharamacology or should pharmacology be taught as a separate subject?

DR. PARK: Transfer of training from one area to another is purely an individual affair and is based, of course, on understanding but would vary with the teacher and with the individual student.

You can't prescribe in detail; your Curriculum Guide can only be a general guide and you are going to have to depend upon your teachers to execute that guide, and you are going to have to employ those individuals that you know have enough intelligence and enough interest in the subject that they will execute it in the best way they know how. I don't think you can be so extremely specific as to time or as to exact details or to exact method.

Again I don't want to be misunderstood, but I think it is going to have to be general suggestion rather than specific cut-and-dried little statements right down the line.

MRS. STEPHENSON: Dr. Park, when you teach a subject in the university you usually have one textbook. We do not. We have seven or eight, and people vary in their opinion of what is indicated for this anesthetic. Some say, "We can't give cyclopropane for cardiac patients," others say, "You certainly can!" We don't have one textbook that will cover our needs entirely.

DR. PARK: We don't have one textbook in education, either. For example, I teach a course at Northwestern in Methods and Materials of Instruction. A gentleman over at Minnesota uses a textbook, "Modern Methods of Highschool Teaching." A gentleman in Texas uses a book by Umstadt on "Teaching in Secondary Schools." I don't use any set textbook at all.

The textbook is only a teaching tool, an interpretation of that, and the use of it is not necessarily the most important question for you to consider. I rather doubt whether you could get universal agreement on one textbook. In fact, I know of a State where they say, "Thou shalt use so-and-so history textbook." Do you know what they have done? They have bought copies of the textbook in some instances, put them on the shelves of the classroom

and the teacher has proceeded to use anything she wants because the teachers are not satisfied with one state-adopted text.

PRINCIPLES AND METHODS OF TEACHING

By Joe Park, Ph.D.

The remarks I have to make this morning are outlined on the paper, so if you can't understand what I say, you can at least read the outline. I am going to do the typical thing that a college professor always does: he usually gives a reference or two to which students may turn to read.

I should like to suggest three books. There is a little book I mentioned last evening by Raleigh Schorling. The name of the book is "Student Teaching". He discusses lesson plans, supervised study, problem solving, how to conduct a lesson hour, how to prepare lesson plans, etc.

There is another book by Umstattd, "Secondary School Teaching".

There is a third by Douglass, "Modern Methods of High School Teaching", written in 1926.

I shall stick to my outline in this discussion this morning, and I want you to ask any questions at the end or during the lecture. Personally, I am opposed to classroom lectures, as such. One full hour of classroom lecture without an opportunity to ask questions I think might be a poor educational procedure to follow day after day.

Last evening I mentioned that there were three qualities which a teacher should possess; she should know something about her subject matter; she must have training in methods and she must have personality. We mentioned that the three could not be ranked in any particular order; they are all of importance. I choose at this time to discuss the matter of teacher personality.

There have been a great number of studies of teacher personality. The two most important ones I have listed here on this sheet. By consulting school administrators, college professors and others interested in education, Charters and Waples secured a list of traits which were possessed by people who were judged to be good teachers. They had a very long list of traits. These traits were then listed in the order of their importance, as determined by the frequency with which each trait was mentioned.

They found that the most important trait possessed by successful teachers as listed by the persons consulted was first of all a breadth of interest in the community, the profession and the students.

Secondly, they found that the authorities in the field believed that self-control was next in importance. Under self-control are included such items as calmness, dignity, poise and reserve.

If I may digress for just a moment, I'd like to call to your attention a recent publication of the National Education Association on discipline. You do not have the discipline problems that are present in public schools but I want to mention something here concerning poise and dignity.

There is nothing wrong with poise or with dignity, but Redl and Shevlakov, authors of this National Education publication on discipline, believe that one of the reasons why teachers fail to maintain discipline in their classrooms is that they have a false sense of dignity, a put-on sense of dignity, a holier-than-thou attitude in the classroom.

Getting back to the Charters and Waples study, it was discovered that good judgement ranked third, (discretion, foresight, insight and intelligence.) The authors also found that leadership ranked fourth and scholarship fifth.

In another study conducted in Ohio, Light made a list of the traits most frequently observed in poor teachers. He got his list from students in high school, and I think high school students are more nearly related to the type of students that you have than any other public school student. He went to the school home rooms, and asked some hundred students to answer two questions—one question running something like this: What were the traits possessed by the poorest teacher you ever had?

I have listed here the negative side of the picture. Of course the positive side would be practically the reverse of what I have listed. The list of traits most frequently observed in poor teachers as reported by the students themselves reads as follows:

Partiality. That is, a teacher who has a pet or a series of pets, or a teacher who allows certain students to get good grades just because they are friendly and play up to her.

Secondly, the trait of unpleasant disposition and quick temper, the teacher who flies off the handle at the least little thing.

Third, lack of discipline. Believe it or not, students want discipline. They don't want discipline for discipline's sake, that is, strictness just for the sake of being strict, but they do want orderliness in the class room. They do not want chaos.

Fourth, it was observed from the replies of these students that poor explanations often were reported as a trait possessed by a poor teacher. Students want good explanations, clear explanations of the material being discussed.

In fifth place was listed lack of knowledge. Some teachers don't know enough about the subject, evidently, and the students are aware of it. Oftimes a display of lack of knowledge is in reality a display of lack of preparation, but students detect it, I believe, as a lack of knowledge and label it as such.

The next item is lack of humor.

The next is indefinite assignment. That is, the students don't know what they are supposed to do. The teacher says on the way out of the classroom, after the bell has sounded, "Read the next ten pages and answer questions 3, 5 and 7." Or she may give some long assignment to the students and add a final remark "That ought to keep you busy."

The next one is very humorous, I think, "talks too much." "She nags" was next, and last was "too strict" for the sake of being strict.

With these traits in mind, we can begin examining ourselves to see how we are doing. Do we talk too much? Do we nag? If so, let us try to eliminate these undesirable traits. If we are too strict for the sake of strictness, let us examine ourselves on that point.

In other words, I would like to recommend to each teacher, that every once in a while, she get herself off in a corner and ask this question: "How am I doing? What are the mistakes that I make? How may I eliminate them?"

Oftimes the personality of a teacher destroys the value of the subject matter because the student begins to despise the teacher, then in turn despises the subject because of the teacher. Our personalities have an important influence upon our teaching.

I would not for a moment want to imply that every teacher can have every student completely won over. I think that is impossible because there are al-

ways certain clashes of personalities. A certain president said if he could bat .500 he was doing O.K. I'd say if a teacher could bat .666 she is doing well. That is she would have two-thirds on her side; that is not so bad. If she got 80%, that is better, and 90% is still better. I think 100% is almost impossible to obtain.

Next I should like to discuss with you some of the principles of learning. There are certain recognized principles of learning set up by psychologists and educators which have stood the test of reason and experience. I am going to discuss about twelve of these, some at greater length than others.

First of all, I want to say that psychologists, since the turn of the century, have been talking in terms of certain laws of learning. I suppose you have all heard about the laws of learning. The first law of learning is "Get the students ready to learn that which you want them to learn." Putting it in simple terms, we say "Let's motivate them. How can we get them to want to learn that which we want to teach them?" That is the first big problem.

There are several devices which may be used. One is to explain to them the importance of the subject which is about to be learned and how it relates to that which they will be later doing in their training. I haven't time to discuss that at great length, but the first law of learning that is recognized is the law of readiness, getting students ready to learn—motivation.

I have just completed a study of how 147 students said they were motivated when they were in school. I wish you could read it because some of the students said they were motivated by everything from the ruler to sound motion pictures. Very few of them, by the way, were motivated by rulers.

The second law of learning is the law of exercise, or the law of use and disuse. It is perfectly sensible to assume that an individual will remember that which he uses and will forget that which he does not use. To teach subject matter which will not be used and expect the students to remember it is absolute folly. Rarely will they remember that which they do not use; the only rare exceptions are probably those that are connected with some emotional condition.

The third law of learning is known as the law of effect or the law of reward and punishment. That has since been modified but generally speaking it is true that individuals repeat those experiences which are pleasurable and avoid repeating those experiences which are not pleasurable, and your students will have a tendency to repeat the experiences which are pleasurable to them, and will have a tendency to avoid anything that resembles punishment.

I realize that these last two or three statements I have made could very well be argued by psychologists in this audience.

The next point I want to make concerns "stamping in" and "gestalt." There has been a theory in education that all you had to do to get someone to learn was first to get him ready, second, have him practice (that is, use the law of exercise) making him stamp it in, stamp it indelibly upon his mind by mere repetition and then praise him for good work or punish him for his faults or mistakes.

I certainly do not wish to be misunderstood when I make this statement: There is now psychological evidence to show that the mere repetition of a mistake on the part of a pupil or student is probably as strong as some punishment which might be used to deter the repetition of that same mistake. That is, to cause a student to make the first mistake is an error on the part of the teacher; if at all possible, she should avoid allowing a student to make the first mistake because psychol-

ogists are telling us now the mere initial repetition of a mistake causes the student to be quite apt to make that same mistake the second time. The thing is to set him off on the right track the first time.

Getting the student ready, the exercising or stamping in and a reward or punishment was at one time thought all that was important. Then a group of German scientists came along and said "There is more to it than that."

I will go over to the blackboard and try to diagram this. I hope you will not laugh at my drawing; it really is not an attempt at humor even though I realize that humor is necessary in any lecture. This is not supposed to be humorous.

Thorndike performed a number of experiments in learning in which he used chickens and human beings. He had some ingenious devices to teach people. Let's talk in terms of his experiments with chickens. He would put a chicken in a maze and he would observe how the chicken got out. The first two or three times the chicken would take much time. Thorndike said the chicken was learning by trial and error. I am going to diagram the first two or three experiences of that chicken. After the first two or three times, the chicken would get out in less time, and Thorndike said by repetition or "stamping in" and trial and error, the chicken learned how to get out.

But the gestalt psychologists said, "Mr. Thorndike, you are leaving out one important thing. That is the idea of gestalt," and you see the word there. It is not the name of a man. I repeat, gestalt is not a gentleman's name; it is a German word which means "insight", "configuration" or "form". The best word I think is insight. In other words, learning isn't merely learning by trial and error and then stamping in that which the individual has learned by chance. There is more than that to learning, there is a matter of insight. When an individual sees through that which he is trying to learn, learning takes place more rapidly.

Which leads me to point Number 2 on the outline, "understanding should precede drill." That is to say, to drill someone on something that he doesn't understand might result in his being able to fill a blank on an examination but it doesn't assure the individual knowing anything about what he has been repeating.

For example, I suppose there are people in this room who can repeat: "The square of the hypotenuse is equal to the sum of the squares of the other two sides." How many of you could explain what you had said after you had said it? You have learned a bit of subject matter but you don't know what it means.

Now you folks probably have a number of people sitting in your classes who are memorizing information when they don't know what it means. If this assumption is true, the practice should be avoided.

Putting together Number 1 and Number 2, I am trying to say this: It is not so important to know the three fundamental laws of learning plus "gestalt", but it is important to know that before an individual can use intelligently anything he has learned, he must know and understand its meaning. The matter of "the square of the hypotenuse is equal to the sum of the squares of the other two sides" is very simple when you understand it and it is absolutely meaningless until you do understand it.

The first two principles of learning therefore, I think can be summed up in our second point on the outline "understanding should precede drill". The teacher is a key in giving understanding to textbook materials, laboratory exercises, et cetera.

Continuing with the subject of drill, you notice Number 3, "drill and practice should be intelligently distributed and paced". That is, if a football coach

were going to teach his boys to fall on a football, he wouldn't take them out some afternoon, and say, "I'm going to teach you all how to fall on a football." Rather his theory would probably be, "I will have five minutes of ball recovery on one day and then have five minutes the next day and I may wait a day or two, and then have another such period."

What I am trying to say is that in classrooms, shorter and more numerous drill periods are to be the rule rather than long but rather few drill sessions. If it is necessary to repeat and repeat something, let's distribute that practice. The important thing for us to remember is the distribution and pacing of practice.

"Know the character of a good performance" is point Number 4. How can you demand a good performance on the part of the student without the student knowing what a good performance should be or without your knowing what a good performance should be?

"Manual guidance is less desirable than intelligently supervised practice." It used to be that the Jewish people in their system of education, back before the Middle Ages, would have their children to follow, by means of a stylus on a wax tablet, all the letters which they were to learn. Some of you may have been in school where the teacher held your hand and guided the hand along the page when you were writing these little ovals and push-ups. She might as well have been at home while she was doing that because psychologists now tell us that the important thing is that the individual practice under his own power and/or with a model and the intelligent verbal guidance of the instructor.

"Prevention is better than cure". That goes back to something we were saying a while ago, let's try to avoid allowing a student to make the first mistake, because then he has to un-learn that which he has learned, and learn something new. If there is a right way to do something, let's teach the student the right way the first time.

Number 7: "Too much guidance may kill the interest of the learner." He may finally come to think that he is merely your stooge. He wants some independence.

Number 8: "Positive suggestions are superior to negative ones." We have long said, in education, "Don't do this" —"Don't do that". Rather we ought to say, it seems to me, "Wouldn't this be a better way?—Have you thought of doing it this other way?"

Number 9: "There are practical and there are physiological limits to learning", is the next point. To illustrate: I definitely put a practical limit on the subjects I took in college because I said "I can't spend any more time on this subject. I have to do something else." So I just did so much to get by and stopped. There are such things as physiological and psychological limits. That is, all are limited by native ability and interest, factors which operate in every classroom.

Number 10: The rate of forgetting is relatively rapid. I spoke last evening of Wesley's study; I will do nothing more than to refresh your thinking on that. You remember Mr. Wesley tested some of these high-school students and at the end of three years a few did not know enough to answer one question of 65 questions on American history. These next sub-points are important:

a. Reading and reasoning deteriorate less rapidly than do some of the other processes. For example, factual data, such as specific dates, statistics, etc. deteriorates very rapidly.

b. Dull persons forget more in proportion than bright. It is true that a dull student in your class will probably know less when he begins than the bright student; he will learn less during the course than the bright student, and he will forget more in proportion

than the bright student. Supposing he forgot just as much in proportion as the bright student. He would still know less at the end than the bright. This theory that we have had that you should bring all students to one level in the classroom is incorrect.

Number 11: "Retention is best following rest". Students who are tired and sleepy are less apt to retain the subject matter than are those who are rested and come into the classroom with a clear mind for the class hour.

Number 12: I want to state that the ability of man to learn has been underestimated. I think the Army has shown that to be true. We have generally underestimated the ability of human beings to learn, which means perhaps that in the future, we will have to reorganize our methods of teaching in order to accomplish that which is possible to accomplish in the classroom.

Since I discussed "Organizing Instructional Materials" last evening, I am going to skip over that and say a few things about the lecture, because I am sure that in the schools where you are that you have made much use of the lecture technique.

The only point that I claim to have followed in the preparation of this lecture this morning is point Number 1; I believe that I carefully outlined it and put it into your hands. I claim no other virtue for what we are saying this morning.

However, details should not be hidden in a lecture. The important points should be made clear if at all possible. Speaking should be on a conversational level. There should be a rapport established with the group so that the group will be willing and ready to interrupt the lecturer at points to clear up items.

Avoid talking too fast. If the talk is long, it is wise to introduce some discussion along the line.

We should avoid meaningless digressions.

The most delightful speakers are those who have a sense of humor.

So much for the lecture. I am going to say only two or three things about note-taking. Note-taking is a skill that should be taught to students. We are finding in our freshman program at Northwestern University that many of our students do not know how to take notes. I don't think they are necessarily peculiar; they are supposed to be pretty good students, many of them are scholarship students. My guess is that note-taking is often done in one of two manners: either the student tries to take everything that has been said in class or he assumes that he knows a great deal more than he really knows and therefore takes too few notes. It might be well in some instances to prepare a brief outline of the lecture, and place it in the hands of the students, showing them that there are certain main points which are to be discussed on this particular day. On other occasions have students attempt to select high points while listening to the lecture.

Now let us turn to class discussions and special reports. I suppose you use both in your classes. I want to report on a class that I observed; it might possibly have some suggestions for you. The instructor came into the class room and distributed some outlines of the course which was to cover a period of six or eight weeks. He began by saying, "Now on this outline you will find a number of topics. I am going to expect one or more individuals to be responsible for reporting on each of these topics. I am going to give you some time to prepare, and I am also going to give you a choice of topics." Each individual in the class on the following day signed up for a topic. The instructor lectured for about the first four or five days so that the students would have some time to prepare their topics which they were going to use as a basis for special reports in the class. After the first week, the

students started a series of reports which were not read in class but were given in nice, informal twenty-minute presentations, followed by thirty minutes of discussion.

The theory behind this, I understand, was to encourage the students to do some learning on their own and not feel that education was merely a pouring-in process but rather was a searching process. So often we have operated in the classroom as if the human mind were a jug. I suppose that is the origin of the expression "jughead". Anyway, Mr. Page observed this as far back as 1840.

The classroom might well turn more of its activities back to the student, let the student do more preparing and the teacher less lecturing, with the student spending more time in reports and discussion. In this manner, the student can discover what he does not know, he can clear up misunderstandings and share information.

Too often classroom experience has been something like this: When the teacher talks, take notes. When the students talk, go to sleep. In many instances the students can learn and teach subject matter in a classroom by means of special reports just as well as the instructor. In fact, it does a thing which I tried to point out to you last night, it inculcates a habit of independent study, something which I think you want your students to continue after they leave your classroom.

Going on to the Daily Lesson Plan, it is usually recognized that there are seven parts of a lesson plan. First of all, the purpose; second a series of activities, that which will go on in the classroom, whether it be lecture, special reporting, testing or what have you.

Then there is the matter of the time budget. The time budget cannot be specific for each class hour but it can be suggestive. She may have to fluctuate a bit, but the teacher should think in terms of how much time she needs for this and how much for that. The assignment oftimes is squeezed out at the end of the hour because the teacher forgot to save enough time for giving the assignment.

What sort of illustrations will I use —verbal, concrete? By "concrete," I mean pictures, charts, slides, motion pictures, graphs. Then questions. If you pick up Mr. Douglass's book, you will see that he mentions there are such things as pivotal questions, questions which are used by the teacher to start class discussion. Mr. Douglass would suggest that if you want your students to think, don't ask them "where," "what" and "when," but ask them "how" and "why" questions. Did you ever happen to think what sort of answer you would get from a student if you asked him (and I will have to stay in the field of history) "When did Columbus discover America?" "1492" is all he has to say. Such a question is a pure recall question. There is no particular thought behind the answer. But let us suppose you were to ask the question "Why did we buy the Louisiana Territory?" Here the student has to do some thinking.

Suppose the teacher asked the question, "How should we deal with the new atomic bomb?" You would get a different answer than if you were to ask "What is that recent invention that has been discussed on the front page of the newspaper?" The student would answer the last question by saying "The atomic bomb." What we are interested in is making persons think. In your classroom you will want to have factual information. You will have to have understanding of that factual information. However, you will want to go further, you will want students to think about the how and the why of the information they are gaining.

Mr. Douglass would recommend that how and why questions be used in class-

room discussions in as many instances as possible. Sure you have to ask when, where and what, or the factual, but the how and the why are the thought provoking questions.

Now to get back to the point. Mr. Douglass would suggest that your lesson plan include pivotal questions.

The assignment is often the most neglected part of our lesson plan because of failure to set aside enough time, failure to explain clearly what is to be done and the habit of asking students to do work unrelated to the subject in order to keep them busy until they can come back to the next session. Of course the assignment should be related to that which is being studied. The students should see clearly how it relates to what has been studied and how it will lead them into that which is to be studied.

Now the **Appraisal.** We are now where I am supposed to be later on this week. I am supposed to talk about testing a little later. It is necessary to appraise for two reasons: You ought to let the student know how he is getting along in the course. There is another reason for appraising work and that is to find out whether you are teaching anything. Have you ever thought of the possibility of giving a test before you gave the course? Have you thought of giving a pre-test to find out how much they don't know, and then give another test at the end to find out how much they have learned. The same method might be used for a day or a week. Testing is not done and appraisals are not made primarily for the assigning of grades. I think the main purpose is to find out how well we are teaching and how well the students are learning. Every appraisal should be followed up by a discussion to eliminate misunderstandings which have been uncovered by means of the appraisal technique.

Reviews. I am now, as you will note, culling out certain sections of the lesson plan for purposes of emphasis. There are several types of reviews which can be conducted, the written review or the test is one. Another technique is to assign a series of questions at the end of the hour and tell the student to go out and find the answers to these questions and hand them in at the next meeting.

The problem review is often used in schools. The instructor assigns a problem rather than questions. The problem may be solved in or out of class, and it may be based on the subject matter which has been studied during the previous day, week or semester.

Then there is the lecture technique. The instructor briefly summarizes in lecture form, taking some five or ten minutes, the main points which have been covered in any particular period of time.

The objective test has been used for reviewing. The test is placed in the hands of the students and the students are told to answer the questions to the best of their ability. After the student has completed the test, he may look up the answers in a text book, or in his notes, or he may raise any question he wants to in a discussion period. You see, the test would be administered only to allow the student to find out how much he didn't know or how much he did know.

Moving to the **Assignment,** I am going to repeat some of the things I have said here. I think the third point has been emphasized sufficiently, but not the second one, "Introduce the new and relate it to the old." Oftimes assignments are made in isolation. The assignment should be definite and clear and it should stimulate the interest of the student. It should be adjusted to the time of the student. There is no need of giving an assignment which would take five hours when the student has only two hours to do it, because the student can give but two hours to it and that is all he will give. You always

encourage cheating when you ask too much of your students, because if they can't get it legitimately, some of them are going to think about getting their preparation illegitimately. You can cultivate cheating in any grade from the kindergarten through the graduate school by requiring so much that the student can't do it.

Also while I am on this point, you can create cheating by a seating arrangement, too. Where you have students seated around a table and you give them true and false examinations, you make cheating very probable.

Let us return to the **Assignment.** It should provide for individual differences. You don't have the problem of individual differences that are present in public schools; most of your students I suppose, are able to carry the work. But there are sometimes perhaps, occasions when you have to make arrangements for differences between this group and that group or certain individuals in the class. There are times when, by directing questions to a certain individual, it is possible to encourage him in his work. It is also possible to ask questions which would discourage him in his work. You should always consider that when asking questions or making assignments. Will this question or this assignment discourage or encourage a certain individual? Encouragement is to be preferred to discouragement, as we said earlier.

MRS. SILVER: How can you encourage a student to ask questions if she has an inferiority complex? In the grades or in public schools she was very much discouraged and hampered in asking questions.

DR. PARK: Individual differences are difficult to handle. I know one little technique that usually works fairly well. You know if you are a good teacher you don't sit down very much; you have to move around. You folks have noticed that. You have to walk around in the classroom or laboratory, and you can always get around to a position to observe the work of a particular student and you can say to that student quietly "Well, that is pretty good work." Then when the class discussion comes along, you see, you have already built up the situation. You have said to that individual "That's right," you have given your approval to the student's preparation, before the individual says anything at all in class. Then when he gets up to say something, he has your confidence to begin with. Oftimes you can help individuals to find answers. You can help them outside of class to give them confidence. That would be my stock answer. Does that answer you?

MRS. SILVER: Yes.

DR. PARK: I think it is a matter of giving the individual confidence in his own answer before he gives it to the group, if there is a classroom discussion situation.

Written work: Oftimes you can ask the student after he has turned in a paper to reconsider it. Say, "I don't make a practice of doing this," but "I believe you can do better work than this. I want to give you thus and so advice. If you will go home and do this over, I will grade it."

The greatest need for teachers is horse sense, just common ordinary horse sense in dealing with people as human beings. We have too often thought of the teacher as a human being and the students as animals. Animals have to be beaten or shoved or led by the nose.

One or two other comments on questioning.

Adequate distribution of questions is to be encouraged. That is, always to pick on the same students for the answers is not good practice. As teachers, we should take great pains to distribute the questions among the members of the class. There are several ways you can do this. The way I don't like is to take a class roll and say "Miss Smith,

how would you define anesthesiology" (That is the only thing I can think of). Miss Smith might define it, perhaps she doesn't. Let's assume she doesn't. The next one after Smith is Thompson and the teacher says "What is your answer Miss Thompson?" Miss Thompson doesn't know, so the teacher goes on to Turner, right down the list. Well, what happens? Every body else rests. They know she is going down the list, she is in the T's so why should the A's and B's and C's worry?

Distribution of questions need not be a perfect distribution each day but over a matter of time it should be as nearly perfect as possible. I would not call on people in turn nor would I call on the individual and then ask the question. I would ask the question of the entire group and then call on some one individual to answer the question.

Distribute questions. It might be well to keep a record of the distribution of questions. Someone in the back of the class can check by means of a chart and you can immediately find out how many people are responding, who is responding too frequently, and who is not responding at all.

Avoid repeating questions. You have probably been in class rooms where the teacher asked the question, "When did we purchase Louisiana?" Somebody in the back row could not hear so the teacher repeated "When did we purchase Louisiana?" Still all the students didn't hear so she repeats "When did we purchase Louisiana Territory?" One statement of the question should be sufficient.

It is also an equally bad habit to parrot the answer. I don't see that on this outline but it should have been. Haven't you been in class rooms where the teacher would ask a question "When did we purchase Louisiana Territory?" and the student would answer, "In 1803," the teacher would say, "That's right, 1803". The students learn to listen for the teacher's repeat of the student's answer.

Here is another common practice: Some student launches into an answer to a why or how question, the teacher says "That's right. That's right. That's right". Or she may say "No," and begin shaking her head. That is a perfect guide to a student, isn't it? All the student has to do is to look at the weathervane.

MRS. SILVER: Couldn't you do that to encourage students who are a little backward in answering questions?

DR. PARK: I should think there might be, on rare occasions, a reason to vary from that to encourage a student. I wouldn't see any reason why you shouldn't do it.

MRS. SILVER: I think in our work occasionally we would have to repeat the answer.

DR. PARK: Why not let the student repeat the answer?

MRS. SILVER: I think if the instructor repeated the answer she would probably clarify it a little more than the student.

DR. PARK: Well, a student's answer ought to be as good as the teacher's if they are one word answers. If they are more than one word, there might be an exception. But you want these students to understand it just as well as you do. Then why not let them explain it? Why not let someone else try to explain it until it is explained clearly? I'd pass it around until it is made clear to all the members of the group.

What I wanted to mention was repeating the answers. Teachers have a tendency to tell too much and students do not have an opportunity to explain or to think through things for themselves. I remember once when I was about a third grade pupil the teacher asked the question, "What is a lighthouse?" and I held up my hand out of pure ignorance. She said, "All right what is a lighthouse?" I said, "I know

but I just can't quite tell you; I can't think of the right word," or something like that, and she told me something I shall never forget. She said, "If you can't tell it, you don't know it." And I believe that is right. If you can't tell it, you don't know it.

Under **Miscellaneous,** I threw in a lot of things. Supervised study is your laboratory as I see it. You can't supervise study if you do not know something about the student and the student's individual problem or problems.

Study skills and supervised study are so closely related that I shall go on to the next one, audio-visual aids. I want first of all to make myself clear on this point. Audio-visual aids are not confined to the film; there are many visual aids besides motion pictures, film strips and slides. Motion pictures, film strips and slides have had a tendency to crowd into the center of the stage and to push out of the limelight such important visual aids as charts and graphs, the blackboard, specimens and models. The interest in audio-visual aids has increased since the Army and Navy have used them so much. The Army and the Navy have definitely shown us that by use of audio-visual aids we can increase learning. We knew that before the Army and the Navy started their audio-visual education programs. I don't know what films and slides and charts and so on will do for the field of anesthesiology but I do know that in other fields learning invariably has increased. We have estimates running from 10% up to 50% or 60% or even 70% in some instances, of increases in understanding and increases in the factual knowledge obtained.

Now what are some of the things that teachers should keep in mind when using visual aids? First of all, remember they are aids and are not something that you bring into the classroom and show the student and then walk out and forget about. Visual aids are as much an aid as any laboratory exercise you have; a visual aid is just as much an instructional aid as a textbook. In fact, a textbook is a visual aid.

The teacher would want in all instances when using a slide, a flat picture, a chart or a motion picture, to have that in the classroom and to relate it with that which is being studied. Too, frequently we have brought materials into the classroom that had no relationship whatsoever to that which is being studied.

Many teachers have found it practical to raise a number of questions before the films and slides are shown, these questions to be kept in mind while the students are observing the visual aid. Teachers have found it necessary to show and re-show good films and slides and charts. Many teachers have used them to introduce units, have used them to teach the unit showing the film the second time, have used the film (just to confine ourselves to the film for a moment) as a review of that which has been studied. It is not uncommon in classrooms of some of our outstanding schools to see one particular film shown as many as three times.

Teachers have even gone so far as to test on the contents presented in films. I think that is to be commended. There isn't any reason why we shouldn't test on films. We test on a text book, we test on a lecture.

Now in closing, I want to discuss the relative merits of the sound and silent picture. The answer is that sometimes the silent picture is best, sometimes the sound, depending on how you are going to use it. Why have any sound, any music, other than just a few comments from the narrator, when you have a beautiful flower opening. You don't need Hollywood music for that. The best example of a sound picture which was completely out of place is one I saw on birds. Hollywood music drowned out the native sounds of the

birds. There was no need for the music.

In many instances, the sound or the semi-sound is less preferable than the silent picture. In fact, in the Army and Navy, they often turned off the sound, running the film as a silent film. After the film had been run and the students had studied their text books, the instructors sometimes picked a student to explain to his fellow classmates the material being shown in the picture.

I started out to discuss the relative merits of sound and silent pictures. It depends on circumstances or use. There have been three studies and the conclusion reached is that we don't know which is best.

What is best, a slide or a motion picture? What is best, a blackboard or a slide? It all depends on what you are dealing with. Why use a sound motion picture, or why use a slide if you are going to teach the multiplication tables? You wouldn't want to write on a slide "2x2" and then throw it on the screen. That would be asinine. Why not write it on the blackboard?

TESTING

By Joe Park, Ph.D

While I am talking on evaluation and have headed this outline as a discussion of Testing, I first want to make it clear that testing is secondary; there are other things more important than testing. The learning on the part of the student is the thing we want to stress. Tests have been devised to determine how much the student has learned and how well we have taught.

Tests are not the only means of evaluating work which students have done. There are such other techniques as the personal interview and observation. We rely upon tests because we feel that they are more objective, less subjective than our observations and our interviews.

At this point, let us establish two general categories of tests for purpose of discussion. One we shall call the essay, the type where the student writes his answer at some length; the other, the objective type, the type of examination in which the individual checks the answer, circles the T or the F, or tries to select from one list some item that matches with an item in another list, or attempts to select the right answer from the possible three or four choices which are given.

The short answer test is more comprehensive, usually, than the essay; more detailed information can be covered in a short answer test than can be covered in the essay. Students who are expecting the short answer tests usually react in these ways; First, they have a tendency to memorize answers and statements which they think will serve as answers. Students who prepare for short answer tests put emphasis upon detailed information. They learn definitions in the main, key words, figures, dates, etc. On the other hand, when students are preparing for essay examinations, they try to get general ideas or over-views of the material in question, form their own personal opinions. They often try to interpret material or more often they try to fix the general outline in mind and then proceed to add details.

In other words, what I have said is that when the test is to be a short answer test, there is more of a tendency to look for detailed information while when the essay examination is used, there is more of a tendency to look at the all-over pattern of the material.

Of course, it is quite obvious why some people use a combination test of the essay and the short answer, isn't it? Because they want to emphasize both the general outline and the details.

I want to pause long enough to discuss the difference between what we'd call a standardized test and a teacher-constructed test. I suppose you folks

have little use for what we call a standardized test, but I am going to discuss it for the benefit of those who may not have given it much thought.

A standardized test is made by examining the subject matter to be covered and proposing a whole series of possible questions. Let us assume that in connection with this particular course, for which we want to develop a standardized test, we would have four hundred questions. Some questions would be True and False, some with blanks to fill, some matching, some multiple choice. We would read these questions, and from inspection, we might discover that fifty questions were not good, so we would throw away fifty to begin with. You see, we are trying to select the best questions possible. We would then submit the remaining 350 questions to a group of fifty students, maybe a hundred, who would know the subject matter of such a course. From this administering of the test, we would find that there are a hundred questions in the lot that every student could answer. These would be discarded. Then we would find that there are some that none could answer. These would be discarded too. We have remaining approximately one hundred questions, just one hundred which are discriminating. We therefore have a series of one hundred questions on the subject which we think measures the knowledge of students who are supposed to have studied the subject.

We administer this test to great numbers of the students, two hundred, four hundred, a thousand, fifteen hundred, maybe three thousand. Then we find the mean score. "Mean" as you know is an average score. And we call that average score the norm. By the "norm" we mean the average score, and anybody who scores above the norm is said to be above the norm. That is, if the norm is found to be 65 and somebody makes a score of 75, he is above the norm on this particular standardized test. If he makes a score below the norm of 65, say he makes a score of 35, he is below the norm.

This term "norm" has been misused by some people and I want to make it quite clear. A score above the norm does not indicate that the individual is above normal; it only means that he had a score above the average of the scores made by other individuals who have taken the same test. Likewise, any individual who has a score below the average of that for the students taking the test, is not subnormal. The only thing we can say is that he has a score below the average of others who have taken the test.

There are two or three other terms I might discuss. One is "validity", and the other is "reliability". A test is reliable when it measures in a consistent manner. A test is valid when it tests what it purports to test. Whenever constructing tests therefore, we always are concerned about reliability and validity. Is it a reliable test? Does it test what we want it to test?

Don't go home worried about having tests that are perfectly reliable, or valid. Our tests are only relatively reliable. The chances are that a test is not much more than 80 per cent to 90 per cent reliable, even the best of them.

It is usually maintained that teacher-made tests fit instructional objectives better, yield greater benefits to the teacher and are more adaptable to continuous evaluation of achievement throughout a semester, than are standardized tests. Such tests are more adaptable to continuous evaluation of achievement throughout a semester.

If you have a standardized test which covers the whole course, it isn't very usable in the middle of the course when you want to find out how well the student has done on the first half of the course.

Standardized tests are more useful in the tool subjects where achievement is to be viewed as a prediction of possible future achievement. We conclude that generally our own teacher-constructed tests, be they essay or be they objective, are to be preferred.

That takes us down to the question of preparing tests. I have six suggestions or statements:

Avoid the obvious. There is no use asking a student a question that does not discriminate between the student who has prepared and the student who has not. You wouldn't think of going into the room with a thermometer that would measure only 98.6; you'd want one that would measure up to—I suppose—how far do they go? 106, 107, 108? You'd want one that would measure practically any patient that you would happen to run into. The same is true of test questions. You would want a test composed of questions which measure the accomplishments of all individuals in the classroom.

Tricky questions. You are not interested in tricking people; you are interested in finding out how much students know.

The trivial,

The meaningless and

The ambiguous.

Let's eliminate them. You know the old song, "We want to eliminate the negative and latch on to the affirmative"?

Let's try to observe the rules of rhetoric, grammar and punctuation.

Avoid items on which experts will not agree or if such items are included in a test, let's give the student an opportunity to do one of two things: Put down any answer which is acceptable, or let him give an answer and cite the authority. That is fair. But to say to the student, "You give me the answer I want, and I don't care what you have read elsewhere," that is a little arbitrary.

Avoid items which contain irrelevant cues such as "a" or "an". Sometimes the student knows that "an" fits with the word better than "a". If he has any trust in your grammatical ability, he will select the answer from the standpoint of grammar, rather than from the standpoint of knowing the answer.

Avoid items which furnish answers to other items. It is entirely possible that a student could read on the first page of the examination, "Christopher Columbus discovered America in ——" and the student would write "1492",—then he'd turn to the second page and read, "Who discovered America?" He could turn back to page one, if he had any intelligence at all, and read that it was Christopher Columbus who discovered America. All he would need to do would be to turn back to page two and write in the answer.

We might debate this next point a bit. This is Remmer and Gage's idea: "Require all students to take the same tests." Pupils cannot be compared unless they do take the same test. There might be times when we wouldn't want to use the same test with all pupils in crowded circumstances. In a classroom, sometimes two forms are given. Form A or Form 1 is given to the students who are numbered with even numbers, and Form B or Form 2 is given to those numbered with the odd numbers. However, you wouldn't want to compare students on Form 1 with those on Form 2 unless you knew that the tests were comparable.

The question of spelling always comes up. Are you going to grade the students on spelling? I know some people who have a maximum number of points that they deduct for misspelling. That is, five points will be taken off if five or more words are misspelled. If the student misspells one word, one point is taken off; if he misspells two words, two points are taken off, and so on until a total of five is reached. All misspelled words above

five are not considered in estimating the grade. The idea that while spelling is to be encouraged, the knowledge of the subject is to be considered more important than spelling. I suppose that is as good a compromise as you can get.

In making up the simple recall question, avoid using the text book. That is, copying a sentence directly from the textbook and then leaving out a word. By the way, a practice that is even worse than that is to copy a sentence from a textbook and leave out two or three words—"In ....., ... discovered ....." You see how impossible it would be if you'd leave a couple of words out of a sentence here and another over here somewhere for the student to really get the sense of the sentence?

It is recommended that where you are asking for the definition of terms, perhaps it is better to provide the word and require a definition rather than to provide the definition and require the word.

It is recommended in the simple recall questions that the questions be written in full sentences, that hinting at answers be avoided and that space be provided for answering, at the right side of the page—or at the left. You try it sometime. Much time can be saved by having all the answers on one side of the page. You can make a key, and when you start marking the paper, you can put your answers right beside those spaces and it saves you many minutes and maybe even hours of time. By looking back and forth across the page, trying to find answers, it is more difficult, tiring and conducive to error.

I suppose teachers have more trouble with True and False questions than any other because of the misunderstanding of what is meant in many of the statements. It is recommended in writing a True and False question, that the following form be used:

T. F. 1.....

Thus the T's and F's are in a row along the side of the page. This makes possible the use of a key in scoring the papers.

Teachers should avoid burying false parts of statements in a casual phrase. That is, don't make the main part of the statement true and then somewhere sneak in, in a nasty unkind manner, some little false phrase which would make the entire statement false.

There are such things as specific determiners, such words as "only", "alone", "all". We might include here the use of double negatives.

The next point is correction for guessing. I could give you folks a test without any questions and give you a score. Supposing I gave you fifty numbers and you wrote those fifty numbers down on the page and then I told you to write after each one of these either True or False, just at random. Then I would mark your paper without you knowing what the questions were, without knowing what the questions were myself, without anyone knowing what the questions were; in fact there wouldn't be any questions. You all would have a score, because you'd be dividing your notations for some kind of totaling.

One of the most simple means of partially eliminating the results of guessing is to take two off for the True and False questions which are answered incorrectly.

Let us next consider the multiple choice question, you know, the question which reads, "Who discovered America? (a) George Washington, (b) Abraham Lincoln, (c) Theodore Roosevelt, (d) Franklin Delano Roosevelt or (e) Christopher Columbus?" All the student has to do is to write down on a blank somewhere the correct answer, or put a check before the correct name. If you are going to use the multiple choice type of question, use a direct question for introducing it. Follow the question with a listing of the various

distractors.

Secondly, distractors should be plausible. A student of history would not be misled by the name of one of our presidents. If he had any historical sense at all, he would know that the country had to be discovered a long time before the president of that country could be elected. That type of distractor is immediately eliminated by the student, and he narrows his choice down to one or two because the other two or three he knows can't possibly be correct.

Avoid cues to the correct answer. It is recommended that you use four or five distractors. If you use only two distractors, the same thing is true as was true of the True and False questions, a 50-50 chance. If you add more distractors, assuming that they are well chosen, the individual has to show a greater amount of discrimination.

In the matching type question, the element of guessing is considerable. One way to eliminate guessing is to have more possible responses than there are items with which to match them. For example, if we had ten items on one side of the page, and had fifteen on the other, the individual would have to show more discrimination than if we had ten on each side of the page. Another way to eliminate guessing is to permit certain items to be used more than once.

This leads us to the arranging of test items according to difficulty. I don't know whether you have heard of it before, but there are certain tests referred to as power tests. By "power tests" we mean tests which are supposed to be constructed in such a manner that the easiest questions come first and the more difficult questions come later. This makes it possible to determine not only the number of questions which an individual can answer correctly but also how far into the difficult material he can work.

Let us turn next to directions to students. There are a few simple directions I think we ought always to give our students. We ought to ask each student to write his name on his paper. If we are afraid we will be prejudiced by having the student write his name on the paper, we can use a number system. One way to use a number system is to have a student draw a number at the beginning of the hour. Then instead of writing his name on the paper, the student will write his number on the paper. The teacher can then grade the paper without knowing, unless she can remember the handwriting who had written the answers to the questions. That is one way of eliminating the personal element.

The students ought to be told when they are to begin work. We ought also to tell them the amount of time that will be allowed, and tell them as the test proceeds how much more time they have. An easy way to do this is to write the amount of time remaining at intervals. We ought to let our students know how much time they have, starting them and stopping them so that all are working under similar time limits.

You might ask, "What are you going to do with the student who writes slowly? What are you going to do with the individual who thinks a little slower than others? What are you going to do with the person who comes into the classroom, is frightened, and has to have a little time to get warmed up to the situation?"

There might be occasions when you'd want to make exceptions, but you do have other classes coming in, you have to move along on schedule. Administratively, I think the easiest thing to do is to start at one time and stop at one time.

Students ought to have explained to them the directions for the test. They should be encouraged to answer the easiest questions first and to save more time for the hard ones. I don't see any reason why a student should not go through the test as fast as he wants to,

answering easy questions, coming back and considering the hard ones later.

Students ought to be allowed to ask questions. I believe it is good practice when the student asks a question, to answer the question so that all members of the class can hear it. That is, the student over in one corner asks a question about one of the items. Allow all members of the class to hear that question and to hear the answer to the question. Otherwise, do not entertain the question.

Will there be any penalties for guessing? A student ought to know that before he takes the test. If for True and False questions you are going to take off two instead of one, tell him you are going to take off two before he takes the test. Before the test is given, the day before, it is well to remind the student that he will need a pencil, paper or whatever it is.

So much for the objective test. We turn now to the essay test. Remmers and Gage recommend that no choice of questions be given to students when writing an essay examination. They believe it unwise to say, "Select any five of the following ten questions." They believe that the students ought to be required to answer specific questions, questions on which you want their replies. Especially do they recommend this procedure if students are to be compared on test results. Some recommend that questions be weighed according to time, knowledge of the pupil and so forth. That is to say, it might be well to assign 25 points to one question, 15 points to another, 10 to a third and 20 to the fourth and so forth until a total 100 points is reached. The question that has 25 points assigned to it should be a more difficult question than the question valued at 5 or 10 points.

Grading of papers next commands our attention. Essay examinations are very hard to grade. There have been a number of experiments to show that what is a passing grade in one teacher's class would be failing in another. There have been other experiments to show that what is passing in one teacher's class on Monday might be failing on Friday.

Now one of the best sets of suggestions on how to grade essay examinations I have read comes from Mr. Gates' book on "Educational Psychology". He suggests the sorting or rating method. Mr. Gates in his psychology book suggests that the teacher read all the student answers to a question before going on to the set of answers for another question. And that she make certain comments in the margin to remind her of what she thought of the answer at the time she read it. In this manner, she proceeds through the examination papers until she has read all of them. Following this, the papers are assorted. The good ones are piled to the right, and those that aren't so good, not quite so far to the right, and those that are just average in the middle and then on down. Then each pile is re-examined to find out whether there should be certain shiftings of papers. After the shifting has been done, then final grades may be assigned.

Let us turn our attention to the preparation of students for examinations, which really should precede the giving of the examination. Just as you should teach students to read, so ought you to teach your students to prepare for examination. I would like to suggest, Mrs. Stephenson, that you add another sheet to your "How to study" outline if you haven't already done so and put on a few suggestions as to how your students ought to prepare for your examinations.

In closing, may I say that I am sure you folks have had a very profitable week from the standpoint of exchanging ideas on your subject matter. I trust that you may have picked up

something concerning methods. That was supposed to be my contribution.

I want to make one further statement: This has been one of the most enjoyable weeks that I have ever had in working with a group of people. You have been very kind, very tolerant, and I want you to know that I think you all have been grand to me. Thank you very much.

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The Journal

AMERICAN ASSOCIATION OF NURSE ANESTHETISTS

18 E. Division Street Chicago 10, Illinois

ASSOCIATION News
State and National

Arkansas . . .

The annual meeting of the Arkansas Association of Nurse Anesthetists was held Friday, October 26, in the Silver Room of the Albert Pike Hotel, Little Rock. A turkey dinner preceded the business meeting.

President Mrs. Claudia E. McMillin presided at the business meeting at which the minutes of the previous meeting were read and approved.

Maurice C. Murphy gave a report of the Institute for Instructors of Anesthesiology. Merle Cox, recently discharged from the Army Nurse Corps, spoke on "Anesthesia in Forward Hospital Installations in the European Theatre During World War II."

Officers elected were: Mrs. Claudia McMillin, president, 1311 Louisiana St., Little Rock; Mrs. B. B. Boozman, 1st vice president, 906 N. 15th St., Fort Smith; Lela Belle England, 2nd vice president, Searcy; Ruth Eldred, secretary-treasurer, Sparks Memorial Hospital, Fort Smith.

California . . .

The regular bi-monthly meeting of the California Association of Nurse Anesthetists was held September 20 at the Permanente Foundation Hospital, Oakland. President Mrs. Mae Rowland presided. The minutes of the last meeting were read and approved. It was announced that the by-laws of the California Association of Nurse Anesthetists, which have been approved by the Committee on Revisions of the American Association of Nurse Anesthetists, having been printed and are ready for distribution. The illness of Gertrude Tynan of Manteca was reported and it was voted to send her a book. The secretary-treasurer reported that, due to an oversight on her part, the name of Mrs. Louise Smith was omitted from the August Journal listing of members.

Lt. Comdr. Weinland of Oak Knoll Hospital showed a technicolor film on "Endotracheal Anesthesia." An interesting and instructive talk followed.

The members voted to accept the invitation of Martha Bichel to hold the next meeting at Franklin Hospital, San Francisco. Refreshments were served following the meeting.

Colorado . . .

The annual meeting of the Colorado Association of Nurse Anesthetists was held November 3.

Officers elected were: Mrs. Louise B. Allen, president, 1212 Cherry St., Denver 7; Julia Kassanchuck, 1st vice president, 3824 S. Fourth St., Denver; Venus Wagner, 2nd vice president, Presbyterian Hospital, Denver 6; Frances Nelson, secretary-treasurer, 759 Milwaukee St., Denver 6; Trustees: (3 years) Mrs. Henrietta Moon, (2 years) Mrs. Ann Stevens, (1 year) Mrs. May M. Carpenter.

Florida . . .

Emily Barrett, vice president of the Florida State Association of Nurse Anesthetists, has assumed the responsibilities of the president, Mrs. Carol A. Elmore, who has gone to Haiti.

Georgia . . .

The Georgia Association has decided to establish a lending library on anesthesiology. When the list of books is complete, Billie Caraway, the president, will send a copy to each member. The books may be borrowed by members, prospective members, doctors and others interested in anesthesiology.

Mrs. Durice Dickerson Hanson, executive secretary of the Nurses Association of Georgia, has graciously offered space in the State Nurses' Library. All mailing will be done by that office. The Georgia Association of Nurse Anesthetists will contribute $25 annually to the Nurses' Library in return for this courtesy.

To facilitate the duties of the state secretary, the Georgia State Association has purchased a portable typewriter and filing cabinet.

A recent survey of hospitals in the state of Georgia to determine if there were nurse anesthetists in the state who were eligible for membership in the Association revealed that there were five graduate nurse anesthetists employed in the state who are not members. Letters were sent to them, inviting them to join. Two would like to become members and are willing to take the examination when they have had time to prepare for it. It is hoped that applicants will avail themselves of the lending library for such purposes.

Illinois . . .

The regular meeting of the Illinois State Association of Nurse Anesthetists was held on Wednesday, November 28, at the North Avenue and Larabee Street Y.M.C.A., Chicago. The meeting was called to order by the president, Mrs. Julia Baines. The auditor's report was read by Myra Willenborg, chairman of the finance committee.

Reports were given by the following members who attended the Institute for Instructors of Anesthesiology:

Ann Preister, "The Essentials in Writing a Paper on Anesthesia."

Genevieve Blaszezak, "Drugs."

Mrs. Mae B. Cameron, "The Nurse Anesthetist's Plans for Tomorrow's Responsibilities."

Mrs. Opal Schram, "Oxygen Therapy."

Miss B. Schiffman, educational director of Mt. Sinai Hospital, Chicago, gave an interesting talk on "Social Security for Nurses."

Musical entertainment was furnished by Yoland Horkay, soloist, of Chicago.

There were 50 members present.

Kansas . . .

The annual meeting of the Kansas State Association of Nurse Anesthetists was held November 19 in Wichita. The meeting was arranged at that time so that the candidates for membership in the A.A.N.A. who had taken the second qualifying examination could attend.

The meeting was preceded by a banquet at Droll's Olde English Grill. Seven members and eleven guests, including the speaker of the evening were present. The meeting was held in the living room of the Houston Nurses' Home, Wesley Hospital. Major Robert Thorpe, recently returned from the Mediterranean Theatre of Operations gave an interesting talk on nursing conditions and anesthesia in the field of battle. He also discussed the primitive people of Italy, showing pictures of the country. A poem, "The Anesthetist's Lament" was read by Elma Kottal.

The business meeting, called to order by Sister Ella Risser, president, followed. The minutes of the last meeting were read and approved. The treasurer's report was read by the secretary-treasurer. Letters received from the Executive Office were read and dis-

cussed. Delegates to the National Convention of 1946 were discussed, and final decision will be made at the next meeting.

A case history on the use of curare and pentothal sodium, with cyclopropane, for cholecystectomy was presented by Elma Kottal. There was a discussion of the examination with those who had taken it that day. Refreshments were served at the social hour following adjournment.

Massachusetts . . .

The semi-annual meeting of the Massachusetts State Association of Nurse Anesthetists was held November 27. It was voted to set aside $50 for the purpose of establishing a lending library.

Shina Ritchie of Chestnut Hill was married on August 24, 1945 at Newton Centre, Massachusetts to William T. Jarvis of Brighton. Miss Ritchie was chief anesthetist at the Children's Hospital, Boston, for four years and has been engaged in the private practice of anesthesia for the past ten years.

Michigan . . .

The anniversary meeting of the Michigan State Association of Nurse Anesthetists was held November 17 in the English Room of the Book-Cadillac Hotel, Detroit, with 48 members present.

Josephine Madigan of St. Joseph's Hospital, Detroit, presented a paper on "Spinal Anesthesia for Caesarian Sections," which was followed by a general discussion. Those who attended reported on the Institute for Instructors in Anesthesiology. Mrs. Ann Stefanowski of Harper Hospital, Detroit, and Bertha Dayss of St. Joseph's Hospital, Ann Arbor, gave informal reports on the first qualifying examination of the A.A.N.A.

It was decided to hold a third state meeting each year, to be held after the Tri-State Meeting. This will be an afternoon meeting, time and place to be announced later.

Virginia Walker returned from the European Theater of War on November 17, after having been a member of the Wayne Medical Unit for over two years. Miss Walker became the bride of A. Kemp Schafer on December 10, in Royal Oak, Michigan. Mr. Schafer was also a member of the Wayne Medical Unit.

Oregon . . .

The Oregon Association of Nurse Anesthetists met on October 16 at St. Vincent's Hospital Nurses' Home in Portland, with fifteen members present. President Mrs. Elizabeth Johnson called the meeting to order. The minutes of the previous meeting were read and approved. The treasurer presented her report.

Mary Davis, delegate to the Oregon Hospital Association, reported on the meeting held at Gearhart, September 27-28. A letter was read welcoming the Oregon Association of Nurse Anesthetists into the American Hospital Association.

Mrs. Rose Lela Gish, a recent graduate of the school of anesthesiology of the University of Minnesota, gave a well prepared and informative talk on some of the technics used by Dr. Ralph Knight at the University of Minnesota.

Refreshments were served following the meeting.

The Oregon Association held a meeting on November 13. Mrs. Loretta Case reported on her trip to Chicago and the Institute for Instructors of anesthesiology.

Mrs. Case has resigned from Good Samaritan Hospital, Portland and is now the anesthetist at the University of Oregon Dental School where she is teaching dental students.

Pennsylvania . . .

The monthly meeting of District 1, Pennsylvania State Association of Nurse Anesthetists, was held November 12, at the Jewish Hospital, Philadelphia. A report of the proceedings of the Institute held in Chicago was given by Hilda R. Salomon. Katharine D. Jurgensen of the Swedish Hospital, Minneapolis, Minnesota, discussed the administration of curare. The discussion was followed by a period of questions and answers on the subject.

Awards have been announced for theses entered by student anesthetists in the annual contest sponsored by the Pennsylvania Association of Nurse Anesthetists:

First Prize — JEAN R. HENDERSON, subject "Spinal Anesthesia".

Second Prize—ANNELLA CAMP, subject, "Sodium Pentothal Anesthesia".

Honorable Mention — MRS. INDA WEST FELLER.

ANNE DLUGACH was married on June 17, 1945 and is now Mrs. Schwartz. She and her husband are living in Swarthmore, Pennsylvania.

ALTA IONE GEESAMAN was married on November 22, 1945, and, as Mrs. Latoff, is living in Quincy, Pennsylvania.

Another newlywed is LYDIA EZBICKI OLSEN.

A daughter was born July 16 to Mr. and Mrs. HAROLD J. MCCALLUM. Mrs. McCallum is the former Eva Kellet Hogg.

Utah . . .

Officers elected for 1946: MAYME C. GARRISON, president, 335 5th Ave., Salt Lake City 3; MRS. MARGARET RASMUSSEN, vice president, 2228 Monroe Ave., Ogden; MRS. MARY A. NORMAN, secretary treasurer, 305 Third Ave., Salt Lake City; ASENATH BIGLER, historian. Directors: MAYME C. GARRISON, MRS. LODEMA BOWMAN, ELLENOR LEE, ASENATH BIGLER, MRS. HAZEL NELSON (3 years), MRS. LOLA C. MCGILLIVRAY (2 years), ROBERTA J. HARRIS (1 year).

Wisconsin . . .

The Wisconsin Association of Nurse Anesthetists held a meeting on November 17 at the Hotel Medford, Milwaukee. The afternoon session was devoted to the business meeting with the president, Mrs. Jessie Opdale, presiding. The minutes of the previous meeting were read and approved. The treasurer's report was read and accepted. The proposed revisions of the by-laws were read and accepted.

Mary Donovan read a paper on refrigeration anesthesia as used at the hospital where she is employed. Mrs. Leona R. Higgins reported on the Institute held in Chicago.

A dinner meeting was held in the Poinsettia Room at which Anne M. Campbell, executive secretary of the A.A.N.A. spoke of the opportunities for leadership in the National and state associations. Miss Campbell also described the present method of handling applications and the examination program. Following this talk there was an informal discussion of advanced study for nurse anesthetists and the reasons why such study is advantageous.

The following books, subject to regulations outlined below, may be obtained from the librarian, Melvin L. Werking, at St. Joseph's Hospital, Milwaukee, Wisconsin: Clinical Anesthesia, John S. Lundy; Pharmacology of Anesthetic Drugs, John Adriani; Fundamentals of Anesthesia, National Research Council; Recent Advances in Anesthesia, Langton Hewer; Inhalation Anesthesia, Arthur Guedal; The Physiology of Anesthesia, Henry K. Beecher; Inhalation Therapy, Alvin L. Barach.

1. Books will be loaned to members in good standing.

2. The Association will pay mailing costs one way.

3. Books must be returned by insured mail, securely packed, at end of two weeks loan period.

4. The loan period may be extended an additional two weeks, upon written request to the Librarian.

5. When book is over due a fine of two cents (2c) per day over-due will be charged.

6. Each borrower will be held responsible for the welfare of books borrowed.

7. The circulating library will be closed during July, August, September and October.

Calendar

April 24-25, 1946 — Pennsylvania State Association of Nurse Anesthetists will hold an annual meeting at the Bellevue-Stratford Hotel, Philadelphia.

April, 1946 — Georgia State Association of Nurse Anesthetists annual meeting, held concurrently with the Southeastern Assembly of Nurse Anesthetists and the Southeastern Hospital Conference, Jacksonville, Florida. Exact dates to be announced later.

May 1-2-3, 1946—Tri-State Nurse Anesthetists Assembly, held in conjunction with the Tri-State Hospital Assembly; Palmer House, Chicago, Ill. Michigan, Wisconsin, Indiana and Illinois nurse anesthetists urged to attend. Mrs. Mae B. Cameron, chairman.

CITED FOR WAR SERVICE

CAPTAIN CLARA A. VEZINA, of the U.S. Army Nurse Corps, and a member of the American Association of Nurse Anesthetists, has received a citation from the Headquarters, United States Army Forces of the Western Pacific, which reads: "For meritorious achievement in Biak, The Netherlands East Indies, from 7 November 1944 to 2 June 1945, in connection with military operations against the enemy. CAPTAIN VEZINA was chief nurse anesthetist in the surgical service of a large hospital during a period in which it cared for large numbers of medical and surgical casualties evacuated from the Southern Philippines and Luzon campaigns. Under a heavy census of patients which frequently numbered over fifty per cent in rated capacity, she held complete responsibility for the proper administration of anesthesia to all casualties undergoing operative surgery. In addition, she maintained close supervision over other nurse anesthetists of the staff and contributed much extra effort to instruction and training. By her consistently superior performance, initiative, and devotion to duty in the performance of arduous and exacting tasks, Captain Vezina made an important contribution to the proper care of the sick and wounded in the Southwest Pacific Area."

ANNUAL REPORT OF THE EXECUTIVE SECRETARY, AMERICAN ASSOCIATION OF NURSE ANESTHETISTS

By Anne M. Campbell
Executive Secretary

Notifications to State Secretaries

In accordance with the recommendations made at the pre-convention Board meeting on October 1, 1944, State Secretaries were notified immediately that applications received from an applicant, postmarked prior to midnight October 15, 1944 would be considered under the 1942 By-laws. Applications postmarked later than that date would be considered under the new By-laws and the applicant would be required to pass the qualifying examination.

All who had been Associate Members prior to 1943 were notified that, in accordance with the new by-laws, if they wished to transfer to Inactive Membership, it would be necessary for them to file Active and Inactive application forms to establish their eligibility for Inactive Membership. Those who became Associate Members in 1943, or thereafter were notified that they would be required to file an application for Inactive Membership in 1944 and each year thereafter.

Office Equipment

The following office equipment has been purchased since October 1944:

Remington Rand Kardex, five sections and table; Remington Rand Chaindex; Two Remington Rand files; One reconditioned typewriter; One executive desk; One single pedestal typewriter desk; Two desk chairs; One desk lamp.

Questionnaire to Hospitals

The questionnaire approved by the Board of Trustees was mailed to all hospitals which conducted, or had conducted, schools of anesthesiology. These were mailed in August 1944. All that have been received have been copied, the original questionnaires are on file in the Executive Office the Chairman of the Committee on Education has been sent copies of all, and the Chairman of the Postwar Planning Committee has received copies of the questionnaires returned by army hospitals. Questionnaires had been returned by 51 civilian hospitals and ten army hospitals up to September 26, 1945; sixteen hospitals replied that they had no school and five reported the discontinuance of former schools.

The Journal

The Executive Secretary edits reports submitted by state secretaries of their state meetings and writes a report from the Executive Office for each issue of

THE JOURNAL. She also meets with the Chairman of the Committee on Publications and the editor, at the request of either.

With the transfer of the publication of THE JOURNAL from Cleveland to Chicago, the Executive Office became responsible for maintaining the membership and mailing list. Changes of address are received from individuals, state secretaries, the treasurer, and the post office. The changes do not always indicate whether the member wishes to or should be transferred. Notices of changes of address are sent to the letter service, Mrs. Fife, the secretaries of the states involved in the change, and a copy is kept in the Executive Office. We receive undelivered JOURNALS from the post office, as well as cards indicating the new address and, in some cases, that the individual has moved and left no forwarding address. We have a mailing card for each member and subscriber which is filed with her financial card. These are filed by states, for members, and according to when the subscription's expiration date. The names and addresses of members are alphabetically filed in the Chaindex.

Members and subscribers are notified of returned or undelivered JOURNALS and asked to send 15 cents if they wish to have a second copy sent them. Maintaining the membership list is exacting and time consuming.

Institutional Members

This type of membership was taken out by 47 hospitals. The certificates for Institutional Members were made by the Scroll Studios of Chicago which filled in the name of the hospital to match the type on the certificate. Certificates were mailed in special folders.

The Leaflet

"Anesthesiology—A Specialized Field for Graduate Professional Nurses," was a leaflet which came off the press in April, 1945. Since then copies have been sent to all members of the Association and to all on the mailing list of the American Hospital Association. We have had special requests for this leaflet from Paul Wood, M.D.; Hugh Brown, M.D., director of anesthesiology at Cook County Hospital; the California State Nurses Association; Nursing Information Service of the City of New York; U. S. Public Health Service; U. S. Public Health Service, U. S. Civil Service Commission, Washington, D. C.; Stephens College, Columbia, Mo. (Ass't to the Dean of Administration); Oklahoma State Committee of Nurses; Dr. Westmoreland (AMA); Mary E. Spare, Nursing Consultant, Harrisburg, Pa.; Library, U. S. Civil Service Commission, Washington, D.C.; American Journal of Nursing. The leaflet has been sent to all who ask for information concerning schools of anesthesiology. Up to September 26, 1945, 184 had been mailed in response to such requests.

Lists of schools have been sent in response to 248 requests. (Some were sent before the leaflet was printed.) Eligibility requirements have been sent to 23 who requested them.

Requests for Nurse Anesthetists

Since October 1944 the Executive Office has had requests for nurse anesthetists from 90 hospitals. These have come by letter, telephone, (local and long distance) and telegram. These are listed as received and a list of members interested in changing positions is sent, with the request that we be notified when the position is filled. The list of hospitals wanting nurse anesthetists is so long that we cannot send copies of it to all members interested in changing positions unless they specify the states in which they are interested in locating.

Membership

On September 28, 1945 there were 3,044 members who had paid Active

dues for 1945, and 94 Inactive Members. Of the Active Members 307 were in the service. The records show that 27 Active Members in the service had not paid their 1945 dues. (Note: Adjustment in dues brings the total membership for 1945 to a higher figure.)

Applications sent to Committee on Credentials since Annual Meeting, October 1944:

Old forms (1942 By-laws) 199

New forms 287

Returned for reconsideration, deferred applications and some returned at request of Committee on Credentials 90

Inactive (some returned for reconsideration) 98

The report of the Committee on Credentials will be published in a later issue of this Journal.

NOTES FROM THE EXECUTIVE OFFICE

QUALIFYING EXAMINATION

One hundred and seventy-five applicants were approved for the second qualifying examination for membership in the Association, held November 19 in 35 hospitals, located in 28 states. Of this number 166 actually took the examination.

The third examination will be held May 6, 1946. Applications, to be considered for this examination, should reach the Executive Office not later than March 1, 1945.

SERVICE TRAINED ANESTHETISTS

This office receives numerous inquiries from service-trained anesthetists concerning eligibility for membership. Most of these letters are forwarded to the Chairman of the Postwar Planning Committee, Janet McMahon, University Hospitals, Cleveland 6, Ohio. It would expedite matters if these inquiries were sent directly to Miss McMahon. Specific details concerning theoretical and practical training should be given, as well as subsequent experience. Also, inquiries should show the name and address of the hospital, as well as the name of the commanding officer under whom the course was taken.

G. I. BILL OF RIGHTS

To date this office has been officially informed of the approval of the following schools of anesthesiology for nurse anesthetists under the G. I. Bill of Rights:

Ravenswood Hospital, Chicago 40, Illinois

St. Francis Hospital, Peoria 4, Illinois

University Hospital, Ann Arbor, Michigan

Mt. Carmel Mercy Hospital, Detroit 21, Michigan

Barnes Hospital, St. Louis 10, Missouri

University Hospitals, Cleveland 6, Ohio

St. Mary of Nazareth, Chicago 22, Ill.

Wesley Memorial Hospital, Chicago 11, Ill.

Mary Immaculate Hospital, Jamaica, N.Y.

Duke University Hospital, Durham, N.C.

St. Vincent's Hospital, Portland, Oregon.

A letter received at the Executive Office in reply to an inquiry regarding the G. I. Bill of Rights states:

"You will observe that under the provisions of this legislation an eligible

veteran of the present war is entitled to any course of education or training as he or she may elect and may pursue such course at any approved institution that will accept and retain him or her as a student or trainee. Accordingly, information relative to entrance requirements, courses, standards and policies of institutions is not available in this office, but may be obtained by communication with the institution or institutions in which the veteran is interested.

"You are further advised that educational or training institutions are approved by the appropriate agency of the state in which they are located as being qualified or equipped to furnish education as provided under this law. Therefore, it is considered appropriate that interested veterans communicate with the designated accrediting agency or agencies of the state or states respectively which have been established for this purpose in the area in which such veterans are interested in locating on or after their discharge or release from active service.

"The administration of veterans' legislation has been decentralized to the Field Offices of the Veterans Administration. Accordingly, interested veterans who have been separated from active service may submit their applications for benefits under the provisions of this legislation to the Manager, Veterans Administration Regional Office, serving the territory of their residence, who will fully inform them concerning their eligibility and extent of entitlement to training."

The foregoing letter was signed by H. V. Stirling, Assistant Administrator for Vocational Rehabilitation and Education of the Veterans Administration.

The SERVICEMEN'S READJUSTMENT ACT OF 1944 states in part, under ELIGIBILITY:

A. Veterans not over 25 years of age at the time of entrance into service:

1. That the person SERVED in the active military or naval service on or after September 16, 1940, and prior to the termination of the present war;
2. That the person has been discharged or released from the active military or naval service under conditions other than dishonorable;
3. That the person shall have served 90 days or more exclusive of any period he was assigned for a course of education or training under the Army specialized training program or the Navy college training program, which course was a continuation of his civilian course and was pursued to completion.
4. Any person who was not over 25 years of age at the time he entered the service shall be deemed to have had his education or training impeded, delayed, interrupted or interfered with.

B. Veterans over 25 years of age at time of entrance into service:

1. Any person who served in the active military or naval service on or after September 16, 1940, and prior to the termination of the present war, if conditions of A 1, 2, and 3 above are met, may receive 1 year of education or training or a refresher or retraining course at an approved educational or training institution.
2. A person over 25 years of age at the time of entrance into service must submit satisfactory evidence to show that his education or training was impeded, delayed, interrupted or interfered with, in order to receive training beyond 1 year.

NOTE: The proper agency for the approval of schools of anesthesiology is the State Board of Education of the

state in which the institution is located. Interested veterans should contact the school before applying to the Veterans Administration.

CORRECTIONS IN MEMBERSHIP LIST

McKeon, Pearl, Wilkes-Barre, Pa. (Miss, not Mrs.)

Timerman, Tena, Walla Walla, Wash. (Miss, not Mrs.)

Tomlinson, Hazel, Little Rock, Ark. (Active, not Inactive)

IN MEMORIAM

GOLDIE P. SAMS died on April 6, 1945 in Mingo, Iowa. Miss Sams, a former member of the Michigan State Association of Nurse Anesthetists, was graduated from the Grace Hospital School of Anesthesiology. She was with the Red Cross in Hawaii for two years, returning to the states in February, 1945.

MRS. MAE D. BUTLER passed away quite suddenly on September 3, 1945 at her home in Spokane, Washington. Mrs. Butler had been an active member of the National and Washington State Association of Nurse Anesthetists since 1932.

New England Assembly Meeting

The nurse anesthetists in the six New England States: Maine, New Hampshire, Vermont, Massachusetts, Connecticut, and Rhode Island, are completing their plans to form a New England Assembly of Nurse Anesthetists. The first meeting is to be held simultaneously with the New England Hospital Assembly in Boston, March 12 and 13, at the Statler Hotel. A great deal of interest is being shown in this meeting since only one state, Massachusetts, is organized. The Assembly is, therefore, fulfilling a real need in this section by bringing the anesthetists together for educational and social purposes, in the opinion of its sponsors.

The New England Hospital Assembly has invited the nurse anesthetists to participate in their sectional program. The tentative program is as follows:

Tuesday Morning, March 12—Registration at the New England Hospital Assembly registration desk; visit the exhibits.

2:30 to 4:30—Lecture: Anesthesia for Thoracic Surgery.

Symposium: Inter-departmental Relationships

Coordinator
Administrator
Nursing Director
Physician
Record Librarian
Surgeon
Anesthetist-Physician
Anesthetist-Nurse

Evening: New England Hospital Assembly Banquet.

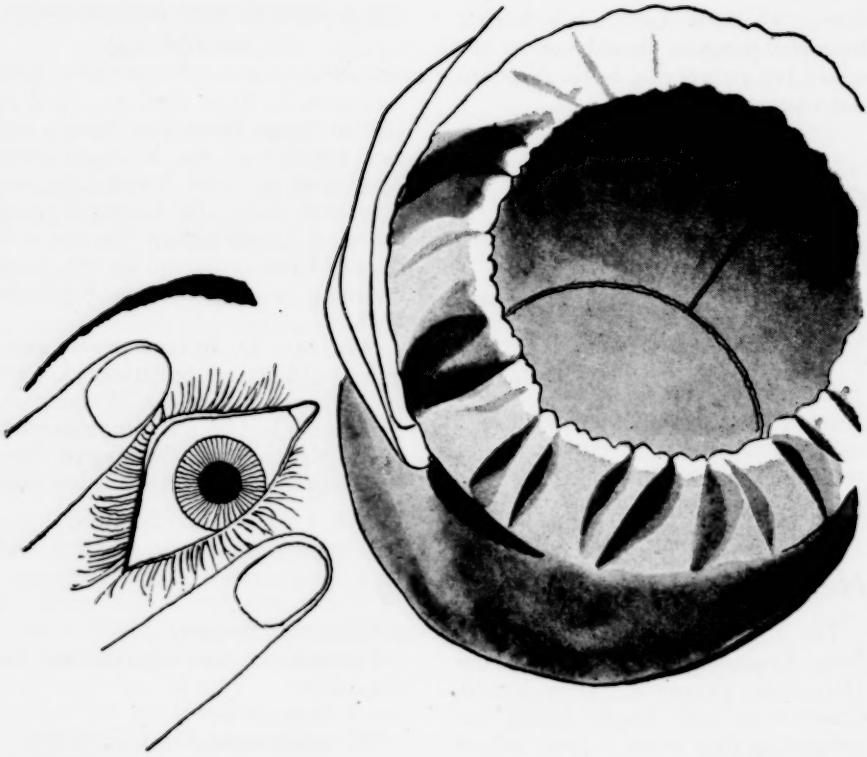
Wednesday Morning, March 13—Visits to anesthesia departments in Boston Hospitals.

2:00-4:30—Round Table: Anesthetic Agents and Allied Drugs

Curare
Pentothal Sodium
Premedicants
Oxygen

Organizational Business Meeting

New England nurse anesthetists are urged to attend and guest anesthetists are cordially welcome. Hotel reservations should be made at once.



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*Zentgraf, L. P., and Eversole, V. H.: Medical Progress: General Anesthesia: New Eng. J. Med. 229:437 (Sept. 9), 1943.

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